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IONOSPHERIC DATA

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CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D. C.

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NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number								
	1953	1952	1951	1950	1949	1948	1947	1946	1945
December		33	53	86	108	114	126	85	38
November		38	52	87	112	115	124	83	36
October		43	52	90	114	116	119	81	23
September		46	54	91	115	117	121	79	22
August	18	49	57	96	111	123	122	77	20
July	20	51	60	101	108	125	116	73	
June	21	52	63	103	108	129	112	67	
May	22	52	68	102	108	130	109	67	
April	24	52	74	101	109	133	107	62	
March	27	52	78	103	111	133	105	51	
February	29	51	82	103	113	133	90	46	
January	30	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 63 and figures 1 to 126 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
- Brisbane, Australia
- Canberra, Australia
- Hobart, Tasmania
- Townsville, Australia

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
- Watheroo, Western Australia

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Ibadan, Nigeria
Inverness, Scotland
Port Lockroy
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
Baker Lake, Canada
Fort Chimo, Canada
Ottawa, Canada
Prince Rupert, Canada
Resolute Bay, Canada
St. John's, Newfoundland
Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
Formosa, China

French Ministry of Naval Armaments (Section for Scientific Research):
Dakar, French West Africa
Tananarive, Madagascar

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

All India Radio (Government of India), New Delhi, India:
Bombay, India
Delhi, India
Madras, India
Tiruchy (Tiruchirapalli), India

Christchurch Geophysical Observatory, New Zealand, Department of Scientific and Industrial Research:
Christchurch, New Zealand
Rarotonga, Cook Is.

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
Oslo, Norway
Tromso, Norway

Manila Observatory:
Baguio, P. I.

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
Kiruna, Sweden

Research Institute of National Defence, Stockholm, Sweden:
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
Lulea, Sweden

Post, Telegraph and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:
Adak, Alaska
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 64 through 75 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 76 presents ionosphere character figures for Washington, D. C., during August 1953, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

RADIO PROPAGATION QUALITY FIGURES

Tables 77a and 77b give for July 1953 the radio propagation quality figures for the North Atlantic area, CRPL advance and short-term forecasts, a summary geomagnetic activity index and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, separately for each 6-hour interval of the Greenwich day, viz., 00-06, 06-12, 12-18, 18-24 hours UT (Universal Time or GCT).
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the four quarter-day Q-figures, before rounding off, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which designate whenever possible the days when significant disturbance or unusually quiet conditions will occur.
(c) short-term forecasts, issued by CRPL every six hours (nominally one hour before 00^h, 06^h, 12^h, 18^h UT) and applicable to the period 1 to 13 (especially 1 to 7) hours ahead. Note that new scoring rules have been adopted beginning with October 1952 data.
(d) advance forecasts, issued semiweekly (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.
(e) half-day averages of the geomagnetic K indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.
(f) illustration of the comparison of short-term forecasts with Q-figures and also with estimates of radio quality based on CRPL observations only.
(g) illustration of the outcome of advance forecasts (1 to 3 or 4 days ahead) and, for comparison, the outcome of a type of "blind" forecast. For the latter the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

The radio propagation quality figures are prepared from radio traffic data reported to CRPL by American Telephone and Telegraph Company, Mackay Radio and Telegraph Company, RCA Communications, Inc., Marconi Company, British Admiralty Signal and Radar Establishment, and the following agencies of the U. S. Government:--Coast Guard, Navy, Army Signal Corps, and State Department. The method of calculation, summarized below, is similar to that described in a 1946 report, IRPL-R31, now out of print. Beginning with recalculated figures for January 1952, only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality. Observations of selected ionospheric characteristics, even though strongly correlated with radio transmission quality, and traffic reports for paths such as New York-Stockholm or New York-Tangier, previously included in the quality-figure determination with low weight, have been left out of the present calculations inasmuch as a sufficient number of homogeneous reports are now available.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the quality scale of the original reports. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year,

with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. The 6-hourly quality figures are (subjectively) weighted means of the reports received for that period. These 6-hourly quality figures replace, beginning January 1953, the half-daily quality figures which formerly appeared in this table.

These quality figures are, in effect, a consensus of reported radio propagation conditions in the North Atlantic area. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

Note. The North Pacific quality figures, which were published through October 1951, have been temporarily discontinued. Since the establishment of the North Pacific Radio Warning Service at Anchorage, Alaska, a larger number of reports are being received than were previously available in Washington. The preparation of the quality figures will be resumed when sufficient data have been accumulated for determination of conversion tables for these new reports.

OBSERVATIONS OF THE SOLAR CORONA

Tables 78 through 80 give the observations of the solar corona during August 1953, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 81 through 83 list the coronal observations obtained at Sacramento Peak, New Mexico, during August 1953, derived by Harvard College Observatory as a part of its performance of a research contract with the Upper Air Research Observatory, Geophysical Research Directorate, Air Force Cambridge Research Center. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 78 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 79 gives similarly the intensities of the first red (6374A) coronal line; and table 80, the intensities of the second red (6702A) coronal line; all observed at Climax in August 1953.

Table 81 gives the intensities of the green (5303A) coronal line; table 82, the intensities of the first red (6374A) coronal line; and table 83, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in August 1953.

The following symbols are used in tables 78 through 83: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

RELATIVE SUNSPOT NUMBERS

Table 84 lists the daily provisional Zürich relative sunspot number, R_Z, as communicated by the Swiss Federal Observatory. Publication of the American relative sunspot numbers, R_A, which usually appear monthly in these pages, is temporarily suspended until new arrangements are made for the reduction of the observations made by the Solar Division of the AAVSO.

OBSERVATIONS OF SOLAR FLARES

Table 85 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris) and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 86 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following four criteria: (1) C; (2) the sum of the eight Kp's; (3) the greatest Kp; and (4) the sums of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Kp is available from 1937 to date as noted in F108.

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

SUDDEN IONOSPHERE DISTURBANCES

Table 87 shows the sudden ionosphere disturbances observed at Washington, D. C., August 1953.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) August 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.8						3.0
01	(290)	2.6						3.0
02	(280)	2.2						3.1
03	280	1.9						3.0
04	(280)	1.8						3.1
05	(270)	2.2					2.6	3.2
06	230	3.4	220	---	110	1.8	2.8	3.3
07	G	< 3.6	210	3.4	100	2.3	3.2	G
08	450	4.2	210	3.8	100	2.5	3.8	2.7
09	400	4.6	210	4.0	100	2.8	4.1	3.0
10	400	4.6	200	4.1	100	3.0	4.0	2.9
11	480	4.7	200	4.2	100	3.2	3.8	2.7
12	410	4.7	200	4.2	100	3.2	3.3	2.9
13	430	4.8	200	4.2	100	3.2	4.1	2.8
14	410	4.8	200	4.2	100	3.2	3.8	2.9
15	380	4.7	210	4.0	100	3.0	3.3	3.0
16	360	4.8	210	3.9	100	2.8	3.4	2.9
17	330	4.8	220	3.6	100	2.5	2.9	3.0
18	290	4.8	230	3.3	110	2.0	3.6	3.1
19	240	5.0					3.0	3.2
20	230	5.0					2.5	3.1
21	250	4.2					3.0	3.1
22	(250)	3.5					2.3	3.0
23	270	3.6					2.4	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Tromso, Norway (69.7°N, 19.0°E) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(3.8)	---	---	---	---	4.0	(3.1)
01	(310)	3.7	---	---	---	---	4.6	3.0
02	(335)	4.0	250	---	---	---	4.4	(3.0)
03	(320)	4.1	250	---	---	---	4.4	(3.0)
04	395	3.2	240	3.8	100	---	3.8	2.9
05	410	3.9	220	3.4	100	2.1	3.2	2.9
06	450	3.9	225	3.5	100	2.3	2.9	2.8
07	445	4.2	205	3.6	100	2.4	3.0	2.8
08	435	4.2	205	3.8	100	2.6	3.0	2.8
09	430	4.2	220	3.9	100	2.7	3.0	2.8
10	410	4.4	210	3.9	100	2.7	3.1	2.9
11	416	4.4	210	4.0	100	2.7	3.2	2.9
12	420	4.4	200	4.0	100	2.8	3.1	2.9
13	400	4.4	210	4.0	100	2.8	3.0	2.9
14	430	4.2	205	3.9	100	2.7	2.9	2.8
15	450	4.1	205	3.8	100	2.6	3.0	2.8
16	405	4.2	210	3.8	100	2.6	2.8	2.9
17	370	4.2	220	3.8	100	2.4	3.1	3.0
18	345	4.1	225	3.6	105	2.2	3.8	3.1
19	(345)	4.0	235	---	105	2.1	3.9	3.1
20	316	4.0	240	---	110	---	4.4	3.1
21	(275)	4.0	245	---	110	---	4.2	3.2
22	(290)	3.9	280	---	110	---	3.9	3.1
23	---	(4.2)	---	---	---	---	3.6	(3.0)

Time: 15.0°E.
Sweep: 0.5 Mc to 26.0 Mc in 5 minutes, automatic operation.

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	(3.4)					5.8	(3.0)
01	300	3.4					4.4	3.0
02	300	3.3					6.2	3.0
03	320	3.7	---	---	---	---	6.6	3.0
04	350	3.8	---	---	---	---	5.0	3.0
05	< 350	3.8	220	3.2	---	---	4.4	2.9
06	400	4.0	220	3.4	---	---	3.5	2.7
07	420	3.8	210	3.5	---	---		2.6
08	480	4.0	220	3.6	---	---		2.5
09	G	< 4.0	200	3.8	---	---		G
10	430	4.2	200	3.9	---	---		2.8
11	G	< 3.9	200	3.8	---	---		G
12	G	< 4.2	200	3.9	---	---		G
13	450	4.4	200	3.8	---	---		2.7
14	G	4.2	210	3.8	---	---		G
15	440	4.4	200	3.9	---	---		2.7
16	410	4.2	200	3.8	---	---		2.7
17	360	4.2	210	3.7	---	---		2.9
18	350	4.2	220	3.5	---	---	3.8	3.0
19	280	4.0	220	3.2	---	---	3.2	3.1
20	270	4.0	---	---	---	---		3.1
21	250	3.8					4.9	3.1
22	250	3.6					4.5	3.2
23	(250)	3.4					4.0	(3.2)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16 seconds.

Table 4

Anchorage, Alaska (61.2°N, 149.9°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3					2.7	2.9
01	300	3.1					3.6	2.9
02	300	2.9					3.1	2.9
03	300	3.0	290	2.4	---	---	2.4	2.8
04	420	3.3	250	2.9	120	1.6	2.4	2.7
05	450	3.6	230	3.1	110	1.9		2.7
06	470	3.8	220	3.4	110	2.2		2.6
07	500	3.9	210	3.6	110	2.4		2.5
08	820	3.9	210	3.7	110	2.6		2.3
09	540	3.9	210	3.8	110	2.8		2.5
10	510	4.2	210	3.9	110	2.8		2.6
11	660	< 4.2	200	3.9	110	2.9		2.2
12	G	< 4.0	210	4.0	110	2.9		G
13	G	< 4.0	210	4.0	110	2.9	3.0	G
14	600	4.2	200	3.9	110	2.9		2.4
15	630	4.2	210	3.9	110	2.8	2.8	2.5
16	460	4.2	220	3.8	110	2.7		2.7
17	440	4.2	220	3.7	110	2.5		2.7
18	380	4.2	230	3.6	110	2.3		2.9
19	320	4.0	240	3.3	120	1.9	2.7	3.1
20	300	4.0	240	---	---	---	3.6	3.0
21	270	3.9	---	---	---	---	1.8	3.0
22	280	3.6					2.5	3.0
23	300	3.5					3.1	2.9

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 5

Narsarssuak, Greenland (61.2°N, 45.4°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	(3.0)					4.6	(3.0)
01	(310)	(3.0)					5.0	(2.8)
02	(320)	(3.1)					5.0	(3.0)
03	(320)	(3.3)					4.3	(3.0)
04	(300)	(3.4)	---	---	---	---	5.2	(3.2)
05	(360)	(3.7)	---	---	100	---	4.8	(3.0)
06	(420)	4.0	220	3.6	100	2.3	4.3	(3.0)
07	420	4.0	220	3.7	100	2.5	4.6	2.9
08	400	4.2	200	3.9	100	2.7	4.7	3.0
09	(480)	(4.2)	200	4.0	100	2.8	3.5	(2.7)
10	(520)	4.3	200	4.0	100	2.9	3.3	2.6
11	(480)	(4.4)	200	4.0	100	2.9	3.4	(2.6)
12	(450)	(4.4)	(200)	(4.0)	100	(3.0)		(2.7)
13	(500)	(4.4)	200	4.0	100	3.0	3.2	(2.6)
14	450	(4.4)	200	4.0	100	2.9	3.3	(2.7)
15	450	(4.6)	210	4.0	100	2.8	3.3	(2.7)
16	400	(4.6)	220	(3.9)	100	2.7	3.5	(2.9)
17	370	(4.4)	220	3.8	100	2.6	4.3	(3.0)
18	350	(4.3)	230	3.6	100	2.4	4.3	3.1
19	320	(4.4)	(250)	(3.4)	100	1.9	4.6	(3.1)
20	280	(3.8)	---	---	---	---	4.8	(3.1)
21	280	(3.9)			---	---	5.1	(3.1)
22	270	(3.7)					6.2	(3.2)
23	270	(3.4)					6.4	(3.1)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 6

Oslo, Norway (60.0°N, 11.1°E) July 1963

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255	3.0						3.0
01	260	2.8						2.9
02	265	2.6			---	---	2.2	2.9
03	275	2.8	---	---	105	---	1.7	2.9
04	(345)	3.1	250	3.0	105	---	2.4	3.0
06	450	3.6	220	3.4	100	1.8	3.7	3.0
06	460	3.7	220	3.6	100	2.1	3.6	2.7
07	470	3.7	210	3.8	100	2.3	3.6	2.7
08	510	4.0	210	3.8	100	2.6	4.0	2.6
09	435	4.4	205	4.0	100	2.7	4.0	2.8
10	430	4.4	210	4.0	100	2.8	4.0	2.8
11	410	4.4	206	4.0	100	2.8	4.0	2.9
12	440	4.6	205	4.0	100	2.9	4.2	2.7
13	400	4.5	200	4.0	100	2.9	3.9	2.9
14	430	4.4	206	4.0	100	2.9	4.0	2.8
15	410	4.4	205	4.0	100	2.8	3.7	2.8
16	406	4.4	210	3.8	100	2.7	3.6	2.9
17	390	4.4	215	3.6	100	2.6	4.0	3.0
18	345	4.3	230	3.6	105	2.3	4.6	3.0
19	310	4.5	240	3.4	105	2.0	3.7	3.1
20	280	4.4	240	---	120	1.6	3.2	3.1
21	255	4.3	---	---	---	---		3.1
22	250	4.2						3.1
23	250	3.5						3.0

Time: 15.0°E.
Sweep: 0.6 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 7

Upsala, Sweden (59.8°N, 17.6°E) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	3.0					2.2	2.9
01	270	2.7					2.7	2.9
02	280	2.6					2.5	2.9
03	270	2.8	270	---	---	E	2.4	2.9
04	410	3.3	245	2.8	---	1.5	2.6	2.8
05	440	3.6	240	3.2	120	1.9	2.5	2.7
06	465	3.8	225	3.5	115	2.2	3.3	2.7
07	445	4.0	220	3.6	110	2.4	3.7	2.6
08	465	4.2	210	3.7	110	2.6	3.3	2.7
09	435	4.4	210	3.9	110	2.8	3.6	2.7
10	430	4.5	210	4.0	105	2.8	4.2	2.8
11	410	4.5	210	4.0	105	2.8	4.1	2.8
12	395	4.6	210	4.0	105	2.8	3.6	2.9
13	390	4.6	210	4.0	105	2.8	3.6	2.9
14	440	4.4	210	4.0	110	2.8	3.5	2.7
15	410	4.4	210	4.0	110	2.8	3.6	2.8
16	390	4.3	216	3.8	110	2.6	3.4	2.9
17	355	4.3	220	3.7	110	2.4	4.2	2.9
18	335	4.3	240	3.5	115	2.2	4.5	3.0
19	300	4.3	245	3.2	120	1.8	3.7	3.0
20	280	4.4	245	2.6	---	E	3.3	3.0
21	250	4.4			---	E	2.2	3.0
22	255	4.1						3.0
23	260	3.5					2.1	(3.0)

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 8

Adak, Alaska (51.9°N, 176.6°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.3					2.2	2.9
01	280	3.5					3.1	3.0
02	280	3.1					2.4	2.9
03	300	2.8					2.2	2.9
04	330	3.1	270	2.4	---	---		2.8
05	440	3.6	250	3.0	130	1.8	2.3	2.7
06	440	4.0	240	3.3	120	2.2	5.0	2.7
07	450	4.2	230	3.7	110	2.5	6.2	2.6
08	480	4.3	220	3.8	110	2.8	6.0	2.6
09	450	4.6	210	3.9	110	2.9	7.4	2.7
10	480	4.4	210	4.0	110	3.0	6.6	2.6
11	470	4.4	210	4.0	110	3.0	6.2	2.7
12	490	4.4	210	4.1	110	3.0	6.0	2.6
13	520	4.4	210	4.0	110	2.9	5.2	2.6
14	520	4.4	210	4.0	110	2.8	4.7	2.6
15	490	4.3	220	4.0	110	2.8	4.3	2.7
16	470	4.2	230	3.8	110	2.7	4.3	2.7
17	380	4.2	240	3.7	110	2.5	4.2	2.9
18	360	4.2	240	3.4	120	2.2	5.0	3.0
19	310	4.4	250	3.0	130	1.7	4.4	3.0
20	280	4.8					4.8	3.0
21	260	5.0					4.7	3.0
22	260	4.8					4.0	3.0
23	280	4.2					3.1	3.0

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 9

San Francisco, California (37.4°N, 122.2°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(290)	(3.0)					3.1	(3.1)
01	(290)	(3.0)					4.1	(3.1)
02	(290)	(2.8)					4.0	(3.0)
03	(280)	(2.9)					3.9	(3.1)
04	(280)	(2.6)					2.3	(3.0)
05	(310)	<2.6	(260)	(2.6)	---	---	3.4	(3.0)
06	(480)	<3.4	240	(3.0)	(110)	(1.8)	4.2	G
07	(450)	(3.9)	210	3.4	100	2.3	4.0	(2.7)
08	440	(4.3)	210	3.7	100	(2.6)	4.6	2.8
09	460	4.4	200	(3.9)	100	(2.8)	4.6	2.8
10	440	4.6	190	(4.0)	100	(3.0)	5.6	2.8
11	(490)	(4.5)	190	(4.0)	100	(3.0)	4.6	2.5
12	460	(4.6)	190	(4.1)	100	(3.1)	6.6	2.6
13	450	4.7	190	4.1	100	3.1	4.4	2.7
14	420	4.8	(200)	(4.0)	100	(3.1)	4.6	2.9
15	430	4.6	220	(4.0)	100	---	4.3	2.8
16	410	4.6	220	(3.8)	100	(2.8)	4.2	2.8
17	380	4.5	220	(3.7)	110	(2.5)	3.9	3.0
18	340	4.6	240	(3.3)	110	2.1	4.3	3.1
19	280	4.8	---	---	---	---	4.0	3.2
20	240	5.3					5.7	3.2
21	(240)	(4.9)					5.6	(3.2)
22	(240)	(4.2)					5.5	(3.2)
23	(260)	(3.3)					6.1	(3.1)

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 10

White Sands, New Mexico (32.3°N, 106.5°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.3					3.6	3.0
01	280	3.2					3.8	3.0
02	280	3.1					3.1	3.0
03	270	2.8					2.7	3.1
04	280	2.8						3.1
05	280	2.7					2.4	3.0
06	340	3.4	230	3.0	120	1.9	3.4	3.0
07	380	4.0	220	3.5	110	2.3	3.8	3.0
08	410	4.4	200	3.8	110	2.7	4.4	2.8
09	420	4.6	200	4.0	110	2.9	4.6	2.8
10	530	4.5	190	4.1	110	3.0	4.6	2.6
11	520	4.7	190	4.1	110	3.1	4.7	2.5
12	470	5.0	200	4.2	110	3.2	4.5	2.7
13	420	5.0	210	4.2	110	3.2	4.5	2.8
14	370	5.1	200	4.1	110	3.1	4.4	2.9
15	360	5.2	210	4.0	110	3.0	4.3	2.9
16	360	5.2	210	3.9	110	2.8	4.1	3.0
17	340	4.9	220	3.7	100	2.5	4.4	3.0
18	290	5.0	230	3.3	110	2.0	4.1	3.1
19	260	5.3					3.7	3.1
20	240	5.5					4.3	3.2
21	250	4.8					4.4	3.1
22	260	3.9					4.1	3.1
23	270	3.6					3.7	3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 11

Okinawa I. (26.3°N, 127.8°E) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.2					4.0	2.9
01	280	4.2					4.2	3.1
02	280	3.8					4.4	3.0
03	260	3.8					4.9	3.0
04	260	3.6					3.4	3.1
05	260	3.3					4.0	3.2
06	250	4.4	---	---	---	---	4.0	3.4
07	260	5.2	230	---	110	2.3	5.0	3.5
08	280	5.2	220	4.0	110	2.7	6.0	3.4
09	340	4.9	220	4.2	110	2.9	6.4	3.1
10	370	5.0	210	4.3	110	3.1	6.4	3.0
11	430	5.0	230	4.3	110	3.2	6.0	2.7
12	420	5.4	220	4.3	110	3.2	6.0	2.7
13	390	6.1	210	4.3	110	3.2	5.6	2.8
14	370	6.9	220	4.2	110	3.1	6.2	2.8
15	340	7.4	230	4.1	110	3.1	6.2	2.9
16	320	7.5	220	4.0	110	2.8	5.5	3.0
17	300	7.8	230	3.7	110	2.4	5.6	3.1
18	260	7.4					4.7	3.3
19	240	6.4					4.4	3.3
20	260	5.4					4.0	3.0
21	270	4.8					4.0	3.0
22	300	4.4					4.0	2.9
23	300	4.4					3.5	2.9

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 12

Maui, Hawaii (20.8°N, 156.5°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.4					3.4	3.0
01	280	4.3					3.8	3.0
02	260	4.3					3.7	3.1
03	270	3.8					2.6	3.0
04	270	3.6					2.8	3.1
05	240	3.2					2.6	3.2
06	250	3.5	240	---	---	---	2.2	3.3
07	300	4.5	230	3.6	110	2.1	4.0	3.3
08	360	4.8	210	3.9	110	2.6	5.4	3.0
09	400	4.9	210	4.1	110	2.9	5.1	2.6
10	450	5.0	200	4.2	110	3.1	6.4	2.6
11	500	5.1	200	4.2	110	3.3	5.7	2.5
12	460	5.5	200	4.3	110	3.4	5.6	2.6
13	420	6.4	220	4.2	110	3.4	5.5	2.6
14	390	7.4	220	4.2	110	3.3	5.2	2.7
15	370	7.9	220	4.1	110	3.2	4.9	2.7
16	330	8.6	220	4.0	110	3.0	5.2	2.9
17	300	9.0	220	3.8	110	2.6	4.5	3.1
18	260	8.8	230	3.4	110	2.0	4.9	3.2
19	240	7.8	---	---			4.0	3.3
20	230	6.4					3.3	3.1
21	250	5.6					3.6	3.1
22	280	5.0					3.4	3.0
23	290	4.4					3.1	2.9

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 13

Puerto Rico, U.I. (18.5°N, 67.2°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.2					3.0	3.1
01	260	4.4					2.7	3.1
02	240	4.4					> 2.8	(3.2)
03	260	4.0					2.9	3.2
04	250	3.6					2.7	3.1
05	250	3.2					2.3	3.1
06	240	3.5			100	——	2.9	3.4
07	250	4.4	210	3.5	100	2.1	2.6	3.4
08	320	4.8	210	3.9	100	2.6	4.4	3.3
09	340	5.0	200	4.0	100	3.0	4.4	3.2
10	350	4.9	200	4.2	100	3.1	4.9	3.1
11	370	5.1	200	4.2	100	3.3	4.8	2.8
12	380	5.6	200	4.2	100	3.4	4.9	2.9
13	370	6.4	220	4.3	100	3.4	5.3	3.1
14	330	6.6	210	4.3	100	3.3	5.5	3.0
15	320	6.7	210	4.3	100	3.2	5.4	3.1
16	300	6.9	200	4.0	100	3.0	5.4	3.1
17	290	7.2	220	3.8	100	2.6	5.2	3.1
18	260	7.3	220	3.4	100	2.0	4.7	3.4
19	250	7.1	——	---			3.9	3.4
20	240	5.6					4.3	3.3
21	240	5.2					4.2	3.3
22	250	4.6					3.5	3.1
23	250	4.2					3.2	3.1

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 14

Guam I. (13.6°N, 144.9°E) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	2.8						2.9
01	330	2.4						3.0
02	320	2.1					2.2	3.0
03	(350)	——					2.1	——
04	(320)	(2.0)					3.6	——
05	(280)	(1.9)					2.4	(3.1)
06	250	3.1						3.4
07	260	5.2	230	——	(120)	——	3.0	3.4
08	280	6.2	220	3.8	110	2.6	5.2	3.3
09	330	5.6	200	4.0	110	2.9	5.8	3.1
10	370	6.0	200	4.1	110	3.2	4.9	2.8
11	410	5.2	210	4.2	110	(3.3)	4.8	2.7
12	420	6.3	200	4.3	110	3.4	5.1	2.6
13	420	7.0	200	4.3	110	(3.4)	5.5	2.6
14	410	7.4	210	4.2	110	3.3	4.8	2.6
15	370	7.6	210	4.1	110	3.1	6.0	2.7
16	350	8.0	220	4.0	110	2.9	5.3	2.8
17	320	8.4	230	3.7	——	——	4.2	3.0
18	290	8.4	240	——	---	——	4.2	3.1
19	250	7.8					2.7	3.1
20	250	6.2					2.5	3.2
21	260	4.5					2.3	3.2
22	270	4.2					2.9	3.2
23	300	3.2					1.8	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 15

Panama Canal Zone (9.4°N, 79.9°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.4						3.0
01	250	4.1					2.0	3.1
02	250	3.8						3.1
03	260	3.4					2.0	3.0
04	260	3.2					1.8	3.2
05	250	3.0					2.8	3.2
06	250	3.0					3.9	3.2
07	250	4.4	230	3.5	(120)	(2.0)	4.2	3.4
08	380	4.6	220	4.0	110	2.6	4.2	2.9
09	460	4.8	210	4.1	110	(3.0)	4.4	2.6
10	440	5.4	220	4.1	110	3.2	4.1	2.6
11	450	5.8	220	4.2	110	3.3	4.5	2.6
12	430	6.8	210	4.2	110	3.4	4.3	2.6
13	390	7.7	210	4.2	110	3.4	4.6	2.7
14	360	8.5	210	4.2	110	3.3	5.2	2.8
15	350	8.9	220	4.0	110	3.1	4.8	2.9
16	310	9.4	220	4.0	110	2.9	4.8	3.0
17	290	9.5	220	3.8	110	(2.5)	3.9	3.1
18	250	8.4	230	(3.2)	——	---	3.7	3.2
19	240	7.6					3.1	3.2
20	240	6.7					3.2	3.1
21	240	5.8					2.9	3.1
22	260	4.8					2.1	3.0
23	260	4.3					2.0	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 16

Kiruna, Sweden (67.8°N, 20.5°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.0	——	——			3.2	3.2
01	280	4.1	240	2.7	——	---	2.5	3.0
02	300	4.0	230	2.9	105	1.9	2.2	3.0
03	330	4.2	220	3.2	100	2.0	1.6	3.0
04	345	4.2	220	3.3	105	2.2		3.0
05	380	4.4	215	3.7	100	2.3	2.5	2.9
06	400	4.6	210	3.8	100	2.6		2.9
07	390	4.8	205	3.9	100	2.8		3.0
08	390	4.9	200	4.0	100	2.9	3.2	3.0
09	400	4.9	200	4.1	100	3.0		2.9
10	430	4.9	200	4.1	100	3.1	3.2	2.8
11	355	5.0	200	4.2	100	3.1	3.1	2.9
12	360	5.0	200	4.2	100	3.1		3.0
13	400	4.7	200	4.1	100	3.1		2.9
14	390	4.8	200	4.1	100	3.0		2.9
15	400	4.7	200	4.0	100	3.0		2.9
16	370	4.7	210	4.0	105	2.9		3.0
17	340	4.8	220	3.9	105	2.8	3.9	3.1
18	320	4.7	230	3.8	110	2.4	3.9	3.1
19	300	4.4	235	3.4	105	2.2	3.9	3.2
20	285	4.2	230	3.1	110	2.0	4.0	3.2
21	300	4.2	230	3.0	110	1.8	3.3	3.2
22	280	4.2	240	2.8	——	——	3.1	3.2
23	280	4.1	260	2.7			3.4	3.2

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 17

De Bilt, Holland (52.1°N, 5.2°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.1					2.0	3.1
01	250	3.7					1.8	3.0
02	255	3.4					2.2	3.0
03	260	3.2					2.3	3.1
04	260	3.7	215	---	---	1.6	3.0	3.2
05	315	4.2	210	3.3	100	2.0	3.5	3.1
06	370	4.3	205	3.6	100	2.3	4.0	3.1
07	350	4.6	205	3.9	100	2.6	4.6	3.0
08	320	5.1	200	4.0	100	2.8	4.7	3.2
09	320	5.0	200	4.2	100	3.0	4.6	3.2
10	360	5.2	200	4.2	100	3.0	4.4	3.0
11	340	5.2	200	4.3	100	3.0	4.3	3.2
12	350	5.0	200	4.3	100	3.2	4.5	3.1
13	400	4.8	200	4.2	100	3.1	4.5	3.0
14	360	5.0	200	4.2	100	3.1	4.5	3.0
15	380	5.0	200	4.1	100	3.0	4.3	3.0
16	330	5.1	200	3.9	100	2.8	4.8	3.1
17	295	5.1	215	3.8	100	2.5	4.7	3.2
18	280	5.2	——	3.4	100	2.2	5.0	3.2
19	270	5.6	250	——	115	1.8	4.1	3.2
20	230	6.1					3.5	3.3
21	220	5.6					3.0	3.2
22	225	5.0					2.6	3.2
23	250	4.4						3.1

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 18

Lindau/Harz, Germany (51.6°N, 10.1°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.3					2.4	3.2
01	255	4.0					2.4	3.1
02	250	3.6					2.4	3.2
03	260	3.3					2.4	3.1
04	270	3.4	250	---	---	E	2.6	3.2
05	300	4.0	230	3.0	130	1.7	3.2	3.3
06	340	4.4	225	3.4	110	2.2	3.6	3.1
07	360	4.5	215	3.8	105	2.5	4.3	3.1
08	340	4.8	205	3.9	100	2.7	4.7	3.1
09	350	5.0	205	4.1	100	2.9	5.0	3.1
10	340	5.2	200	4.2	100	3.0	5.0	3.2
11	380	5.0	200	4.2	100	3.0	5.2	3.0
12	340	5.2	200	4.3	100	3.1	4.5	3.2
13	410	5.0	200	4.2	100	3.2	5.6	3.0
14	390	4.8	200	4.2	100	3.1	5.0	3.0
15	380	4.8	210	4.2	100	3.0	4.7	3.0
16	360	4.9	210	4.1	100	2.9	4.4	3.0
17	330	5.1	220	3.8	100	2.7	5.3	3.1
18	310	5.2	220	3.6	105	2.4	5.2	3.2
19	280	5.4	230	3.3	115	2.0	4.4	3.2
20	260	5.7	260	---	---	E	4.3	3.2
21	240	6.0					3.6	3.2
22	230	5.8					3.4	3.3
23	240	4.8					2.4	3.2

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 19

Schwarzenburg, Switzerland (46.8°N, 7.3°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.2						3.4
01	300	4.0						3.3
02	300	3.8						3.3
03	280	3.5					3.8	3.3
04	250	3.2					3.1	3.4
05	250	3.5	---	---	---	---		3.4
06	300	4.0	200	3.4	100	2.0	3.4	3.3
07	300	4.4	200	3.6	100	2.4	4.2	3.5
08	310	4.6	200	3.8	100	2.7	5.5	3.3
09	300	5.0	200	4.0	100	3.0	4.8	3.4
10	300	5.4	200	4.1	100	3.0	5.5	3.4
11	330	5.0	200	4.1	100	3.1		3.3
12	360	5.0	200	4.2	100	3.1	4.6	3.1
13	330	5.1	200	4.1	100	3.1	4.8	3.3
14	350	5.0	200	4.1	100	3.0	4.8	3.2
15	370	5.0	200	4.0	100	3.0	5.4	3.1
16	340	5.0	200	4.0	100	3.0	4.4	3.2
17	300	5.0	200	3.8	100	2.8	4.5	3.3
18	300	5.2	200	3.6	100	2.4	4.0	3.4
19	280	5.7	200	3.2	100	2.0	4.0	3.4
20	240	5.8					3.2	3.5
21	240	6.4					3.8	3.5
22	210	5.6						3.5
23	250	4.8						3.4

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 20

Formosa, China (25.0°N, 121.5°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(5.3)					5.2	(2.8)
01	270	5.6					5.0	(3.0)
02	250	(5.2)					4.6	(3.0)
03	230	4.0					4.0	3.0
04	250	3.8					3.6	3.0
05	260	3.6					4.0	3.1
06	240	5.0	---	---	100	(1.9)	4.2	3.4
07	260	5.8	240	3.8	100	(2.5)	5.9	3.5
08	300	5.6	220	4.2	100	2.9	6.4	3.2
09	360	5.7	220	4.4	100	3.1	6.8	2.9
10	370	6.3	220	4.5	110	3.2	7.5	2.8
11	360	7.3	200	---	---	---	6.6	2.9
12	360	7.9	---	---	---	---	6.4	2.8
13	360	8.8	---	---	110	3.4	6.6	2.9
14	360	9.3	220	4.5	---	---	5.7	2.9
15	320	9.6	220	4.3	110	3.3	4.9	3.1
16	320	10.1	240	4.1	100	3.0	5.5	3.1
17	280	10.1	220	3.9	---	---	4.7	3.2
18	260	8.9	---	---			5.1	3.1
19	240	8.1					4.0	3.3
20	260	6.8					4.3	3.0
21	280	5.8					4.4	3.1
22	280	5.4					5.2	2.8
23	310	5.4					5.5	2.9

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 21

Baguio, P.I. (16.4°N, 120.6°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.3					7.0	(2.7)
01	260	(4.0)					7.0	(3.0)
02	250	3.8					6.9	3.1
03	270	3.4					7.0	(3.1)
04	260	(3.0)					7.2	(2.9)
05	250	3.0					7.0	(3.2)
06	240	4.6			---	---	5.7	3.3
07	250	5.5	220	---	110	2.4	4.6	3.1
08	(330)	6.0	220	---	110	---	3.3	2.8
09	380	6.6	210	4.1	110	3.0	4.0	2.7
10	410	7.1	200	4.2	110	---	3.4	2.5
11	440	7.5	200	4.2	110	3.3	2.5	2.4
12	450	7.8	190	4.2	110	3.4	2.6	2.4
13	440	8.2	200	4.2	110	3.4	3.4	2.4
14	410	8.1	200	4.2	110	3.2	4.0	2.4
15	390	8.4	200	4.1	110	3.0	3.4	2.5
16	350	8.6	220	---	110	2.6	2.8	2.6
17	300	6.6	220	---	110	(2.3)	4.8	2.8
18	260	8.7			---	---	5.7	2.9
19	240	8.1					5.2	3.0
20	270	6.8					7.0	2.9
21	290	5.7					7.1	2.9
22	320	4.6					7.4	2.7
23	310	(4.2)					7.4	2.7

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 22

Leopoldville, Belgian Congo (4.3°S, 15.3°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	225	3.6					2.5	2.5
01	220	3.0					2.6	2.4
02	(230)	(2.4)					2.2	(2.3)
03	---	(2.3)					2.7	(2.3)
04	(230)	2.4					3.0	2.4
05	240	3.5			---	---	2.1	2.4
06	250	5.8	240	---	125	2.2	2.9	2.5
07	260	6.4	225	4.0	120	2.8	3.0	2.4
08	275	6.6	210	4.1	120	3.1	4.0	2.4
09	275	7.0	205	4.3	115	3.2	3.8	2.3
10	275	7.4	200	4.3	115	3.4	3.9	2.3
11	290	7.4	200	4.4	115	3.4	4.0	2.2
12	300	8.4	195	4.3	115	3.3	3.9	2.2
13	300	8.9	190	4.2	115	3.2	3.4	2.1
14	290	9.2	200	4.0	120	3.0	3.6	2.2
15	270	9.0	240	3.9	120	2.8	3.2	2.2
16	245	8.8	245	---	125	2.3	3.4	2.3
17	220	8.1					3.3	2.3
18	220	6.8					2.8	2.4
19	210	5.9					2.7	2.6
20	210	4.2					2.5	2.7
21	230	3.0					2.6	2.4
22	235	2.8					2.8	2.2
23	(225)	3.5					2.6	2.2

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 23

Huancayo, Peru (12.0°S, 75.3°W) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.0						3.3
01	250	3.8						3.3
02	260	3.8						3.2
03	260	3.0						3.3
04	270	2.5						3.3
05	270	2.1						3.1
06	300	2.2			---	E		2.9
07	240	4.7	240	---	120	2.0		3.2
08	320	5.8	220	---	110	---	6.6	2.9
09	350	6.2	210	4.1	110	---	9.3	2.7
10	380	6.0	200	4.2	110	---	10.2	2.7
11	400	6.0	200	4.2	110	---	11.6	2.6
12	410	5.9	200	4.2	110	---	11.8	2.6
13	420	6.0	190	4.2	110	---	12.0	2.5
14	400	6.2	200	4.1	110	---	11.8	2.6
15	370	6.2	200	4.0	110	---	11.8	2.5
16	280	6.6	200	---	110	---	10.6	2.7
17	240	6.7	240	---	120	2.0	9.1	2.8
18	250	6.8			---	---	5.3	3.0
19	250	6.1						3.0
20	260	5.4						3.1
21	240	5.6						3.2
22	240	5.1						3.3
23	240	4.5						3.3

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 24

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.6						3.1
01	260	2.5						3.1
02	260	2.6						3.1
03	250	2.6						3.1
04	230	2.4						3.3
05	250	2.2					3.1	3.2
06	250	2.2					3.1	3.1
07	230	3.8			---	1.7		3.4
08	230	5.0	220	3.0	120	2.1		3.5
09	250	5.5	210	3.8	110	2.5		3.5
10	260	5.5	200	4.0	110	2.9	3.1	3.4
11	270	5.7	200	4.2	110	3.0	3.4	3.4
12	270	5.8	200	4.2	110	3.1	3.5	3.4
13	260	6.0	210	4.1	110	3.0		3.3
14	260	5.8	210	4.0	110	2.9	3.6	3.4
15	250	5.8	210	3.7	110	2.7	3.4	3.4
16	240	5.8	220	3.1	120	2.4	2.8	3.5
17	220	5.3			120	1.8	2.6	3.5
18	220	3.9					2.0	3.4
19	230	2.8					1.4	3.3
20	240	2.7						3.3
21	240	2.7						3.3
22	240	2.9						3.2
23	240	2.9						3.3

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 25

Watheroo, W. Australia (30.3°S, 115.9°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	3.5					1.6	3.2
01	250	3.5						3.2
02	240	3.6						3.2
03	240	3.6					2.1	3.4
04	240	3.6						3.4
05	220	3.5						3.5
06	220	3.1					1.7	3.3
07	210	3.5						3.5
08	220	4.8	---	---		2.0	2.1	3.7
09	240	5.4	210	3.5		2.5	3.1	3.6
10	250	5.8	220	4.0		2.8	3.2	3.6
11	260	6.1	210	4.1		3.0	3.2	3.6
12	260	6.0	210	4.2		3.0	3.5	3.5
13	270	6.3	200	4.2		3.0	3.5	3.4
14	260	5.9	210	4.0		2.9	3.6	3.5
15	260	6.0	220	3.7		2.6	3.2	3.5
16	240	6.0	230	3.3		2.3	3.5	3.6
17	230	5.6				1.9	3.1	3.6
18	220	3.8					3.2	3.5
19	230	2.9					3.0	3.3
20	240	2.9					2.6	3.2
21	240	3.1					2.6	3.2
22	240	3.2					2.1	3.3
23	240	3.4					2.0	3.2

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes.

Table 26

Capetown, Union of S. Africa (34.2°S, 18.3°E) June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.4						3.2
01	280	2.5					1.9	3.0
02	270	2.5						3.0
03	260	2.6						3.1
04	260	2.5						3.1
05	240	2.4						3.3
06	240	2.2						3.2
07	260	2.0					3.0	3.2
08	230	3.7			---	1.7		3.4
09	230	5.0	220	2.9	120	2.1		3.6
10	220	5.2	230	3.6	120	2.5		3.5
11	260	5.6	220	3.8	110	2.8		3.6
12	260	5.4	210	4.0	110	2.9		3.5
13	270	5.6	200	4.0	110	3.0		3.3
14	270	5.8	220	4.0	110	2.9	3.1	3.2
15	270	5.8	200	3.8	120	2.7	3.2	3.3
16	250	5.8	220	3.2	120	2.4	2.6	3.4
17	230	5.3	220	2.4	120	1.9	2.4	3.5
18	210	4.4					1.9	3.5
19	230	2.6					1.9	3.3
20	250	2.4					1.6	3.3
21	240	2.3					1.8	3.3
22	240	2.6					1.8	3.3
23	230	2.4						3.3

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 27

Resolute Bay, Canada (74.7°N, 94.9°W) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.7	230	---	120	1.6		3.0
01	250	3.7	220	---	120	1.6		3.1
02	240	3.8	220	---	120	1.7		3.1
03	270	3.8	230	3.0	110	1.9		3.1
04	260	3.5	230	3.0	110	2.0		3.1
05	410	3.6	220	3.2	110	2.2		2.6
06	400	3.6	220	3.3	110	2.3		2.9
07	470	< 3.5	220	3.4	100	2.4		G
08	470	3.8	220	3.5	100	2.5		G
09	G	< 3.7	230	3.6	100	2.7		G
10	G	< 3.7	210	3.7	100	2.7		G
11	G	3.7	210	3.7	100	2.8		G
12	G	< 3.8	210	3.7	100	2.8		G
13	G	< 3.8	200	3.7	100	2.7		G
14	G	< 3.9	210	3.7	100	2.7		G
15	430	4.0	210	3.6	110	2.6		2.6
16	470	4.0	210	3.6	100	2.5		2.6
17	410	4.0	210	3.5	100	2.4		2.8
18	370	4.0	210	3.3	110	2.3		2.8
19	360	4.1	210	3.3	110	2.1		2.9
20	310	3.9	220	3.1	110	2.0		3.0
21	280	4.0	230	3.0	110	1.8		3.0
22	260	3.8	230	3.0	---	1.7		3.0
23	250	3.9	230	---	---	1.7		3.0

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 28

Point Barrow, Alaska (71.3°N, 156.8°W) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.7	---	---	---	---	7.2	3.0
01	300	3.5	---	---	---	---	6.4	3.0
02	300	3.7	---	---	---	---	7.4	3.0
03	300	3.5	250	---	---	---	5.7	3.1
04	300	3.4	240	3.1	---	---	5.1	3.3
05	320	3.5	230	3.2	100	1.8	3.8	3.0
06	360	3.8	240	3.4	100	2.2	5.1	2.8
07	450	3.8	220	3.5	---	---	4.9	2.7
08	390	4.2	220	3.7	---	---	5.0	2.8
09	460	4.0	240	3.7	---	---	4.7	2.8
10	500	4.0	220	3.8	100	2.5	4.5	2.6
11	480	4.0	220	3.8	100	2.7	3.8	2.7
12	430	4.1	210	3.8	100	2.8		2.7
13	450	4.2	220	3.8	100	2.8	3.5	2.7
14	460	4.2	220	3.8	110	2.7		2.7
15	430	4.3	220	3.8	110	2.7	3.5	2.7
16	380	4.4	220	3.8	110	2.6		2.9
17	370	4.2	230	3.6	110	2.4	2.5	2.9
18	360	4.0	230	3.5	110	2.1		2.9
19	330	4.0	240	3.3	110	2.1	3.8	3.0
20	300	4.0	250	3.2	110	1.8	4.1	3.1
21	310	3.7	260	---	110	---	4.4	3.2
22	270	3.6	---	---	---	---	4.9	3.2
23	290	3.6	---	---	---	---	7.3	3.2

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 29

Baker Lake, Canada (64.3°N, 96.0°W) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.5			---	E	4.6	3.0
01	250	3.4			---	E	4.0	3.0
02	240	3.3			---	1.2	3.3	3.0
03	250	3.3	---	---	120	1.7	3.9	3.0
04	260	3.2	---	---	110	1.8	4.0	3.0
05	260	3.4	220	3.2	100	1.9	4.0	3.0
06	340	3.7	210	3.3	100	2.2	4.4	(2.7)
07	520	< 3.7	210	3.5	100	2.5	3.8	G
08	480	3.8	200	3.6	100	2.8	5.7	(2.6)
09	490	4.1	210	3.8	100	3.0	4.3	(2.6)
10	480	4.1	210	3.8	100	3.0	4.2	(2.6)
11	470	4.3	220	3.8	100	3.1	4.0	2.6
12	490	4.2	220	3.9	100	3.0		2.6
13	420	4.4	210	3.9	100	3.0	3.4	2.7
14	400	4.6	200	3.9	100	3.0		2.7
15	390	4.6	210	3.8	100	2.9	3.4	2.8
16	400	4.7	210	3.7	100	2.8	4.0	2.8
17	360	4.4	220	3.7	100	2.7	4.0	2.8
18	350	4.2	220	3.4	100	2.4	4.0	2.9
19	320	4.1	220	3.1	110	2.3	4.1	2.9
20	270	4.0	240	2.9	110	1.9	5.5	3.0
21	250	3.8	---	---	110	1.8	6.0	3.0
22	250	3.8			120	1.7	4.5	3.0
23	260	3.6			---	E	6.0	2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 30

Fort Ohimo, Canada (58.1°N, 68.3°W) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.2			---	---	5.0	3.0
01	300	3.2			110	2.7	4.1	3.0
02	300	< 3.3			100	2.6	3.6	3.0
03	300	3.2			110	2.3	4.1	3.0
04	300	3.5			100	3.1		3.0
05	(300)	3.6			100	3.4		(3.0)
06	(310)	< 4.0	---	---	100	3.5		(2.9)
07	400	4.0	210	3.8	100	3.2		2.8
08	560	< 4.0	210	3.9	100	3.0		2.7
09	440	< 4.1	200	4.0	100	3.0		2.8
10	400	4.5	200	4.0	100	3.0		2.8
11	430	4.4	210	4.0	100	3.0		2.9
12	400	4.8	200	4.0	100	3.0		2.9
13	420	4.7	200	4.0	100	3.0		2.8
14	400	4.8	210	4.0	100	3.0		2.8
15	400	4.8	210	3.9	100	3.0		2.8
16	380	4.8	240	3.8	100	2.9		2.9
17	350	4.7	250	3.7	110	2.9		2.9
18	350	4.2	250	3.4	100	2.8		2.9
19	300	4.0	---	---	100	2.6	4.2	2.9
20	280	3.8			100	2.2	5.5	3.0
21	270	3.5			100	2.4	7.0	3.0
22	300	3.2			110	2.3	6.0	2.9
23	290	3.0			100	2.0	5.0	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 31

Prince Rupert, Canada (54.3°N, 130.3°W) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.9					2.5	---
01	300	2.3					3.0	---
02	310	2.1					0.8	---
03	300	1.8					2.0	---
04	300	2.0					1.6	---
05	260	< 2.9	240	---	110	1.6	1.8	3.2
06	400	< 3.4	230	3.2	110	1.9		3.1
07	470	3.8	220	3.4	110	2.3		2.6
08	540	< 3.8	200	3.7	110	2.6	2.8	G
09	450	4.2	200	3.8	100	2.8	3.9	G
10	460	4.4	200	3.9	100	3.0	3.9	2.7
11	440	4.6	200	4.0	100	3.0	4.1	2.7
12	420	4.7	200	4.0	100	3.0	4.0	2.9
13	410	4.6	200	4.1	100	3.0		2.8
14	430	4.7	210	4.0	100	3.0	3.5	2.8
15	430	4.5	200	4.0	100	3.0		2.8
16	400	4.4	210	3.9	100	2.9		2.8
17	380	4.4	220	3.8	110	2.7		3.0
18	330	4.4	220	3.6	110	2.4	2.8	3.1
19	300	4.4	230	3.3	110	2.0	3.8	3.2
20	260	4.4	---	---	130	1.7	3.6	3.2
21	260	4.3					4.0	3.1
22	260	4.0					3.1	(3.2)
23	250	3.3					3.2	(3.2)

Time: 120.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 32

Lindau/Harz, Germany (51.6°N, 10.1°E) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.8					2.0	3.0
01	260	3.4					2.2	3.1
02	260	3.3					2.2	3.0
03	270	3.0					2.1	3.0
04	275	2.9	---	---	---	E	2.2	3.1
05	280	3.5	240	3.0	130	1.4	2.4	3.2
06	290	4.2	240	3.4	115	2.0	3.1	3.3
07	355	4.4	225	3.6	110	2.4	3.4	3.0
08	350	4.8	220	3.8	105	2.6	3.6	3.1
09	350	5.0	210	4.0	105	2.8	> 4.0	3.1
10	340	5.2	216	4.1	100	3.0	4.4	3.1
11	360	5.0	210	4.2	105	3.1	4.1	3.0
12	360	5.0	220	4.2	105	3.1	4.5	3.1
13	355	5.2	210	4.2	100	3.0	4.0	3.1
14	355	5.0	220	4.2	100	3.0	4.4	3.0
15	360	5.0	225	4.1	100	2.9	3.5	3.0
16	350	5.0	220	4.0	105	2.8	3.8	3.1
17	320	5.2	230	3.7	105	2.5	3.6	3.2
18	290	5.4	230	3.5	110	2.2	4.2	3.2
19	276	5.6	240	3.0	130	1.7	3.2	3.2
20	240	6.8	---	---			2.8	3.3
21	235	5.6					1.8	3.2
22	240	4.9					2.4	3.2
23	260	4.2					2.2	3.1

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 33

Winnipeg, Canada (49.9°N, 97.4°W) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.5						---
01	340	2.3					3.0	---
02	330	2.3					2.9	---
03	330	2.6					3.5	---
04	300	2.5					3.0	---
05	270	2.9	---	---	120	1.7	2.0	3.2
06	240	3.5	230	3.2	120	2.0	2.6	3.3
07	(680)	3.8	220	3.5	120	2.4		G
08	500	4.1	210	3.7	110	2.7	4.0	G
09	490	4.2	200	3.9	110	2.9	4.0	G
10	490	4.5	200	4.0	110	3.0	3.8	G
11	440	4.6	200	4.1	110	3.1	6.0	2.8
12	470	4.4	200	4.1	110	3.2	3.5	2.6
13	450	4.4	200	4.1	110	3.2		2.7
14	450	4.6	200	4.0	110	3.1		2.8
15	400	4.8	210	4.0	110	3.0		2.9
16	390	4.6	220	3.9	110	2.9		2.8
17	350	4.7	220	3.8	110	2.7		2.9
18	330	4.7	220	3.6	120	2.4		3.0
19	290	4.6	240	---	130	2.1		3.1
20	260	4.6	---	---			1.7	3.2
21	240	4.1						3.2
22	270	3.0						(3.2)
23	300	2.6						(2.9)

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 34

St. John's, Newfoundland (47.6°N, 52.7°W) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.6						3.0
01	300	2.2					1.3	2.9
02	300	1.8					0.9	2.9
03	300	1.8			---	E	1.7	2.8
04	260	2.6	---	---	---	E	1.4	3.2
05	240	3.4	240	3.2	110	1.8	2.0	3.3
06	330	3.9	230	3.5	110	2.4		3.2
07	330	4.3	220	3.8	110	2.7		3.2
08	370	4.4	220	4.0	110	2.9	3.5	3.0
09	380	4.6	200	4.1	110	3.0	3.5	3.0
10	380	4.7	200	4.2	110	3.2	3.0	3.0
11	380	4.8	200	4.3	110	3.2	3.2	3.0
12	370	4.9	200	4.2	100	3.3	3.3	2.9
13	380	4.9	200	4.2	100	3.2		3.0
14	370	5.0	210	4.1	100	3.1	3.0	3.0
15	360	6.1	220	4.0	110	2.9		3.0
16	350	4.9	220	3.8	110	2.7		3.0
17	320	6.3	230	3.5	110	2.4	2.7	3.1
18	280	5.5	240	3.0	120	1.9		3.2
19	240	5.4			---	E	1.5	3.3
20	240	4.6			---	E		3.2
21	250	4.0						3.0
22	260	3.0						3.0
23	280	2.8					1.4	2.9

Time: 60.0°W.
Sweep: 0.8 Mc to 10.0 Mc in 18 seconds.

Table 35

Ottawa, Canada (45.4°N, 75.7°W) May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.4						3.0
01	(300)	2.0						(3.1)
02	---	2.0					2.8	---
03	---	1.9						---
04	280	1.9						(3.0)
05	250	2.9	---	---	120	1.8		3.2
06	G	< 3.8	220	3.5	110	2.2		G
07	G	3.9	210	3.7	110	2.5		G
08	G	4.0	210	3.9	110	2.8		G
09	400	4.2	200	4.0	110	3.0		2.9
10	480	4.4	200	4.0	110	3.1		2.8
11	400	4.5	200	4.1	110	3.2		2.8
12	440	4.6	210	4.2	110	3.2		2.8
13	420	4.6	210	4.2	110	3.2		2.8
14	400	4.8	200	4.1	110	3.2		2.9
15	400	4.8	200	4.0	110	3.0		3.0
16	360	4.9	210	3.9	110	2.9		3.0
17	320	5.0	230	3.8	110	2.6		3.1
18	300	5.0	230	3.4	110	2.2		3.2
19	250	5.0	---	---	---	---		3.2
20	250	4.7						3.2
21	240	4.0						3.2
22	260	3.2						3.2
23	280	2.8						3.1

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 36

Point Barrow, Alaska (71.3°N, 166.8°W) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0					7.4	3.0
01	300	3.2					6.6	3.0
02	300	3.2					5.4	3.0
03	300	3.0	---	---	---	---	4.9	3.0
04	300	3.1	---	---	---	---	4.2	3.0
05	320	3.2	---	---	---	---	4.0	3.0
06	280	3.4	---	---	---	---	4.0	3.2
07	(400)	3.7	---	---	---	---	4.4	2.8
08	< 480	3.8	---	3.5	---	---	4.8	(2.6)
09	510	(3.8)	240	3.4	---	---	4.4	2.4
10	G	3.7	230	3.6	110	2.7	4.0	2.3
11	660	3.9	240	3.6	110	2.6	3.4	2.3
12	570	4.0	230	3.6	110	2.8		2.2
13	480	4.0	230	3.6	110	2.7		2.6
14	450	4.2	240	3.6	110	2.6		2.6
15	440	4.2	240	3.6	110	2.5		2.7
16	400	4.0	250	3.4	110	2.3		2.8
17	380	4.0	250	3.4	120	2.2		2.9
18	340	3.7	250	3.3	120	2.0	2.6	3.0
19	300	3.8	240	---	120	1.7	3.8	3.1
20	280	3.4	---	---	120	---	4.0	3.1
21	300	3.1	---	---	---	---	4.6	3.1
22	310	3.2	---	---	---	---	5.9	3.0
23	300	3.3	---	---	---	---	7.4	3.0

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 37

Rarotonga I. (21.3°S, 159.8°W) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.2					2.6	2.9
01	280	3.9					2.5	2.9
02	260	3.7						3.0
03	< 260	3.8						3.0
04	< 270	3.3						3.0
05	< 290	3.2						2.9
06	250	3.4						2.9
07	250	6.8	---	---	---	2.0	2.6	3.3
08	250	7.9	230	3.8	110	2.5	3.5	3.4
09	250	7.7	230	4.2	110	2.9	3.9	3.4
10	250	8.0	210	4.5	110	3.1	4.1	3.4
11	260	8.4	210	4.5	110	3.3	4.2	3.4
12	260	8.4	220	4.5	110	3.4	4.5	3.4
13	270	8.4	220	4.6	110	3.3	4.4	3.2
14	270	8.7	220	4.5	110	3.2	4.5	3.2
15	260	8.3	220	4.4	110	3.0	4.6	3.3
16	260	8.1	220	4.1	110	2.8	4.4	3.2
17	250	7.8	240	3.5	110	2.5	4.3	3.3
18	240	7.6					4.1	3.2
19	240	6.4					3.9	3.2
20	240	5.2					3.2	3.1
21	260	4.6					2.9	3.0
22	< 270	4.4					2.6	3.0
23	250	4.2					2.6	2.9

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 38

Christchurch, New Zealand (43.6°S, 172.7°E) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	3.8					2.2	3.0
01	(280)	3.0					2.2	3.0
02	280	2.8					2.3	3.0
03	270	2.8					2.3	3.0
04	260	2.4					2.6	3.0
05	250	2.3					3.0	3.1
06	260	2.4				---	2.9	3.1
07	250	3.8	---	---		1.6	2.1	3.4
08	250	4.9	240	3.3		2.2		3.5
09	230	5.3	230	3.8		2.4		3.5
10	270	5.5	230	3.9		2.7	4.1	3.5
11	280	6.3	220	4.1		2.9	4.3	3.4
12	280	6.1	230	4.2		2.9	4.3	3.5
13	280	6.0	220	4.0		2.9	4.3	3.3
14	280	6.0	230	4.0		2.8	4.3	3.3
15	270	6.0	240	3.7		2.5	4.0	3.4
16	250	6.0	240	3.2		2.2		3.4
17	240	5.6	250	3.2		1.8	3.8	3.3
18	240	5.0					2.0	3.2
19	250	4.8					2.8	3.1
20	(260)	4.1					2.0	3.0
21	270	3.5						3.0
22	(270)	3.4					1.9	3.0
23	(270)	3.4					2.8	3.0

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 39

Point Barrow, Alaska (71.3°N, 156.8°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(3.2)					7.0	(3.0)
01	(260)	---					7.6	---
02	300	(2.8)					4.5	(3.2)
03	(320)	(2.1)					4.6	---
04	(300)	---					4.1	---
05	(320)	---					4.6	---
06	340	(3.1)					4.2	(2.8)
07	---	---	---	---			4.5	---
08	(290)	(3.0)	---	---	---	---	4.9	(2.9)
09	(290)	3.4	---	---	---	---	4.8	3.1
10	(300)	3.5	---	---	---	---	4.0	3.1
11	300	3.7	210	---	120	(2.0)	3.2	3.1
12	(300)	3.9	230	---	120	---	3.2	(3.2)
13	300	3.8	240	---	120	---	2.9	3.1
14	310	3.8	250	3.4	120	(2.1)		3.1
15	290	4.0	240	---	120	---		3.1
16	300	3.9	240	---	120	---		3.0
17	270	4.0	270	---	---	---	2.4	3.2
18	270	3.4	---	---	---	---	3.2	3.2
19	290	3.2			---	---	3.9	3.2
20	(270)	---					4.5	---
21	(320)	---					4.9	---
22	---	---					5.0	---
23	---	---					6.2	---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 40

Rarotonga I. (21.3°S, 159.8°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	< 270	5.1					3.1	3.0
01	270	4.8					2.6	3.1
02	< 260	4.3					2.5	3.1
03	< 280	3.6						2.9
04	290	3.6						2.9
05	< 300	3.5						3.0
06	< 250	3.4					2.3	3.1
07	250	6.0	---	---	---	2.0	3.4	3.2
08	250	7.0	240	4.2	110	2.5	4.0	3.4
09	270	7.8	230	4.3	110	3.0	4.0	3.3
10	290	7.8	220	4.6	110	3.1	4.5	3.2
11	280	8.8	210	4.6	110	3.3	4.4	3.2
12	290	9.5	200	4.5	110	3.3	4.3	3.1
13	290	9.2	210	4.7	110	3.4	4.4	3.1
14	290	9.2	200	4.5	110	3.3	4.5	3.2
15	280	8.5	250	4.4	110	3.1	4.3	3.2
16	290	8.0	230	4.2	110	2.9	4.0	3.2
17	280	7.6	250	4.1	110	2.5	4.1	3.2
18	250	7.7	---	---			4.5	3.2
19	260	6.8					4.2	3.0
20	250	6.6					3.9	3.0
21	270	5.7					3.1	3.0
22	280	5.2					3.3	2.8
23	290	5.0					3.3	2.9

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 41

Christchurch, New Zealand (43.8°S, 172.7°E) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.2						2.9
01	280	2.8						2.9
02	280	2.6					2.3	2.9
03	280	2.6					2.5	3.0
04	270	2.2					2.7	3.1
05	< 280	2.0				---	3.4	3.2
06	260	2.9	---	---		1.4	3.3	3.3
07	270	3.8	250	3.2		1.9	3.2	3.3
08	300	4.4	230	3.7		2.3	3.7	3.5
09	310	5.0	220	3.9		2.7		3.3
10	300	5.2	220	4.2		2.8		3.3
11	300	5.7	210	4.2		3.0		3.2
12	310	5.7	220	4.2		3.1		3.3
13	310	5.8	220	4.2		3.0		3.2
14	300	5.8	220	4.2		2.9		3.2
15	280	5.8	230	4.0		2.7	4.0	3.3
16	280	5.5	240	3.7		2.3		3.3
17	260	5.3	250	3.4		2.1		3.2
18	250	5.3	250	2.6		1.7		3.2
19	260	5.5					1.6	3.0
20	250	5.1					2.7	3.1
21	260	4.6					2.7	3.1
22	270	3.9					3.2	3.0
23	270	3.8					2.5	2.9

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 42*

Inverness, Scotland (57.4°N, 4.2°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	(1.8)						(2.7)
01	310	(1.7)					2.5	(2.8)
02	300	(1.7)					2.3	(2.7)
03	310	(1.8)						(2.7)
04	295	(1.7)					2.3	(2.8)
05	300	(1.6)					1.9	(2.7)
06	305	(1.5)						(3.0)
07	290	1.8						(2.9)
08	235	3.2			(125)	1.6	2.5	3.3
09	250	4.1	(215)	(3.0)	125	1.9	2.7	3.4
10	235	4.7	(215)	(3.2)	120	2.2	2.8	3.5
11	260	4.8	210	3.4	120	2.3	2.7	3.4
12	260	5.1	205	3.5	120	2.4	2.7	3.4
13	250	5.2	210	3.5	120	2.4	2.7	3.4
14	260	5.4	215	3.5	120	2.3	2.7	3.4
15	250	5.2	220	(3.1)	125	2.1	2.7	3.4
16	230	5.0			130	1.9	2.7	3.4
17	230	4.7			(140)	(1.7)		3.3
18	230	4.3						3.2
19	250	3.7						3.1
20	255	3.0						3.1
21	290	2.3						(3.0)
22	310	(2.0)						(2.9)
23	310	1.9						---

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 43*

Slough, England (51.6°N, 0.6°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	2.7					2.6	2.9
01	270	2.8					2.6	2.9
02	270	2.9					2.6	2.9
03	270	3.0					2.8	2.8
04	270	2.6					2.6	2.9
05	265	2.2					3.4	3.0
06	260	2.0					2.6	3.0
07	240	2.9			140#	1.8	2.6	3.2
08	225	4.4	210#	2.9	135	1.7	3.6	3.4
09	240	5.0	220	3.2	120	2.1	3.4	3.6
10	260	6.4	210	3.5	120	2.4	4.2	3.4
11	260	5.8	216	3.7	120	2.6	4.2	3.4
12	265	5.6	220	3.8	120	2.7	4.4	3.4
13	255	5.8	220	3.8	120	2.7	4.4	3.4
14	255	5.8	215	3.7	120	2.6	4.2	3.4
15	240	5.4	225	3.5	120	2.3	4.2	3.4
16	235	6.6	235	3.0	125	2.0	3.6	3.4
17	225	5.0			145	1.7	2.5	3.4
18	230	4.4					2.4	3.2
19	240	4.2					2.3	3.2
20	240	3.6						3.2
21	265	2.9					2.0	3.0
22	285	2.9					2.3	3.0
23	280	2.6					2.6	2.9

Time: 0.0°.
Sweep: 0.65 Mc to 16.5 Mc in 6 minutes.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 44

Delhi, India (28.6°N, 77.1°E) February 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00	280	3.0						3.2
01	280	2.9						3.2
02	280	3.1						3.3
03								
04	240	2.8						3.4
05	260	2.8						3.4
06	260	< 2.8						3.4
07	240	4.6						3.6
08	240	5.7						3.5
09	240	6.6						3.5
10	260	7.2						3.4
11	260	7.4						3.4
12	280	7.9						3.3
13	260	8.6						3.4
14	260	8.3						3.4
15	240	7.4						3.5
16	240	7.1						3.5
17	240	6.8						3.6
18	220	5.6						3.7
19	240	4.2						3.6
20	240	3.9						3.6
21	260	3.2						3.4
22	280	3.0						3.3
23	280	2.8						3.2

Time: Local.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 45

Bombay, India (19.0°N, 73.0°E) February 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	300	5.1						3.1
08	330	7.2						3.0
09	330	7.9						2.8
10	360	9.1						2.8
11	380	10.0						2.7
12	390	10.6						2.6
13	390	10.8						2.6
14	390	11.6						2.6
15	390	11.6						2.8
16	330	10.9						2.8
17	330	10.5						3.0
18	330	9.8						3.0
19	330	8.6						3.0
20	330	7.9						3.0
21	300	6.4						3.0
22	300	5.8						3.0
23	300	5.1						3.1

Time: Local.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 46

Madras, India (13.0°N, 80.2°E) February 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	300	6.4						3.0
08	340	6.6						2.9
09	390	7.4						2.7
10	420	8.0						2.6
11	420	7.4						2.6
12	420	7.6						2.5
13	420	7.9						2.5
14	420	8.6						2.6
15	420	9.0						2.6
16	400	9.3						2.6
17	420	> 9.4						2.6
18	390	9.2						2.6
19	390	8.6						2.7
20	360	7.5						2.8
21	360	> 7.2						2.8
22	360	6.7						2.8
23								

Time: Local.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 47

Tiruchy, India (10.8°N, 78.8°E) February 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06	360	3.3						2.8
07	390	5.5						2.6
08	450	6.9						2.4
09	480	7.1						2.4
10	480	7.2						2.2
11	510	7.0						2.2
12	510	7.2						2.2
13	510	7.4						2.2
14	510	7.6						2.2
15	480	7.9						2.2
16	480	8.0						2.3
17	480	7.9						2.3
18	480	7.8						2.3
19	450	7.5						2.4
20	450	7.2						2.4
21	420	6.9						2.4
22	420	6.8						2.6
23								

Time: Local.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 48*

Singapore, British Malaya (1.3°N, 103.8°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	205	3.8						3.3
01	245	3.4						2.9
02	270	3.0					1.2	2.9
03	275	3.0					1.6	2.9
04	270	2.7					1.5	3.0
06	265	2.6						3.1
06	250	2.5					3.0	3.2
07	250	5.8	235		125	2.0	3.2	3.3
08	236	6.7	225	(4.1)	120	2.6	3.7	3.0
09	320	7.3	220	4.3	116	3.0	4.0	2.8
10	360	8.0	210	4.5	110	3.3	6.0	2.4
11	390	8.4	205	4.5	110	3.4	6.2	2.2
12	410	8.7	205	4.5	110	3.5	5.6	2.1
13	410	8.6	200	4.5	110	3.5	5.4	2.1
14	385	8.8	200	4.4	110	3.4	5.2	2.2
15	355	9.0	205	4.4	110	3.2	4.9	2.4
16	320	9.0	220	(4.1)	115	2.8	4.6	2.5
17	(290)	8.8	230		120	2.4	3.8	2.6
18	255	8.6			135	1.7	3.4	2.6
19	290	8.2					3.2	2.6
20	305	7.8					3.0	2.7
21	280	7.6					3.0	2.9
22	245	8.0					2.9	3.2
23	216	7.2					1.5	3.5

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 49

Townsville, Australia (19.3°S, 146.8°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.3					2.9	3.1
01	240	4.3					3.2	3.2
02	210	3.9					3.3	3.2
03	240	3.6					3.2	3.2
04	240	3.3					3.0	3.2
05	235	2.8					2.4	3.3
06	240	3.4			---	1.3		3.3
07	230	4.4	---	---	100	2.0	3.5	3.4
08	300	5.4	230	4.0	100	2.6	4.2	3.3
09	300	5.8	210	4.1	110	3.1	4.4	3.3
10	300	6.6	210	4.3	100	3.3	5.2	3.2
11	310	7.4	200	4.4	100	3.4	4.6	3.0
12	330	7.6	190	4.5	100	3.5	4.5	3.0
13	310	8.7	200	4.5	110	3.4	4.7	3.0
14	280	8.9	200	4.4	110	3.3	4.4	3.1
15	270	9.4	220	4.3	110	3.2	4.2	3.1
16	265	8.1	220	4.1	110	3.0	4.3	3.3
17	255	6.8	220	3.8	110	2.5	4.0	3.3
18	240	6.7	230	---	120	1.8	3.6	3.4
19	230	5.0					3.1	3.4
20	240	4.9						3.2
21	270	4.7					2.8	3.1
22	280	4.4					2.7	3.0
23	275	4.4					3.3	3.1

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 50

Brisbane, Australia (27.3°S, 153.0°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.7					3.6	3.0
01	240	4.9					3.0	3.2
02	230	4.3					3.2	3.3
03	250	3.3					2.5	3.1
04	260	3.0					3.0	3.1
05	250	3.0					2.0	3.2
06	220	4.1			120	2.1		3.6
07	250	4.9	220	4.0	110	2.6		3.4
08	310	5.2	210	4.2	100	2.9		3.1
09	300	6.1	210	4.3	100	---		3.1
10	310	6.6	---	4.4	100	---		3.1
11	300	7.0	180	4.5	100	3.3		3.1
12	300	7.3	220	4.6	100	3.5		3.1
13	310	7.3	200	4.6	100	3.5	3.0	3.1
14	305	7.1	210	4.5	100	3.5		3.1
15	280	7.2	210	4.3	100	3.2		3.1
16	280	6.8	220	4.0	100	2.9		3.2
17	270	6.2	220	3.8	105	2.4		3.3
18	240	6.2	---	---	---	---		3.2
19	230	6.3					2.8	3.1
20	245	5.4					1.8	3.0
21	260	5.0						3.0
22	290	4.8					1.9	2.9
23	270	5.0					3.4	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 51

Canberra, Australia (35.3°S, 149.0°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.6					3.8	3.0
01	240	4.4					3.7	3.1
02	230	3.8					3.5	3.2
03	230	(3.6)					3.4	3.2
04	240	3.0					3.1	3.1
05	(240)	2.9			---	E	3.0	3.1
06	240	3.8	---	---	---	(1.6)	2.6	3.4
07	240	4.4	220	---	100	2.0	3.4	3.4
08	370	4.9	220	4.0	100	2.7	3.5	3.2
09	325	5.4	200	4.1	100	3.0	3.8	3.1
10	310	5.8	200	4.2	100	3.2	3.8	3.2
11	290	6.2	190	4.4	100	3.3	4.0	3.2
12	300	6.1	190	4.4	100	3.3	3.8	3.2
13	310	6.1	190	4.4	100	3.3	3.8	3.1
14	310	6.0	200	4.3	100	3.3	3.7	3.2
15	300	6.1	210	4.1	100	3.1	3.6	3.2
16	290	5.9	210	4.0	100	3.0	3.4	3.3
17	270	5.8	220	3.8	100	2.7		3.3
18	250	5.5	230	---	110	1.8		3.2
19	240	5.5					2.6	3.1
20	240	5.5					2.8	3.1
21	240	5.3					2.8	3.1
22	(240)	4.9					3.8	3.0
23	250	4.7					3.8	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 52

Hobart, Tasmania (42.9°S, 147.3°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.9						2.9
01	260	3.5					3.5	2.9
02	260	3.0						2.9
03	250	3.0					3.0	3.0
04	250	2.8					3.0	3.1
05	250	3.0					3.0	3.0
06	240	3.6			110	2.0		3.1
07	220	4.3			100	2.5		3.1
08	220	4.5	---	---	100	2.8		3.1
09	350	5.0	200	4.2	100	3.0	3.5	2.8
10	340	5.8	200	4.5	100	3.2	3.7	3.0
11	340	6.0	200	4.5	100	3.4	3.8	3.0
12	320	6.0	200	4.5	---	---	4.0	3.0
13	320	6.0	200	4.5	---	---	4.1	3.0
14	320	6.0	200	4.5	100	3.4	3.9	3.0
15	330	5.8	200	4.4	100	3.2		3.0
16	310	5.6	200	4.2	100	3.0		3.0
17	220	5.4			100	2.5		3.0
18	230	5.5			100	2.0		3.1
19	250	5.5						3.1
20	250	5.5						3.1
21	250	5.0						3.0
22	250	4.5						3.0
23	250	4.0						3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 53

Delhi, India (28.6°N, 77.1°E) January 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00	300	3.0						3.2
01	300	3.0						3.2
02	(300)	2.9						3.2
03	---	---						---
04	280	3.0						3.3
05	280	3.2						3.3
06	260	3.4						3.6
07	260	4.2						3.5
08	240	5.8						3.6
09	260	6.7						3.4
10	260	7.4						3.4
11	250	7.8						3.4
12	260	7.2						3.5
13	260	7.0						3.3
14	260	6.8						3.4
15	250	6.5						3.4
16	240	6.0						3.4
17	240	5.7						3.5
18	260	4.5						3.4
19	260	4.8						3.4
20	260	4.2						3.4
21	260	3.2						3.4
22	280	3.0						3.2
23	300	2.9						3.2

Time: Local.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 54

Bombay, India (19.0°N, 73.0°E) January 1953

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	270	4.8						3.2
08	300	6.9						3.1
09	300	7.6						3.1
10	330	8.4						2.9
11	330	9.6						2.9
12	360	9.9						2.8
13	360	10.4						2.8
14	360	10.8						2.8
15	360	10.4						2.8
16	330	9.6						3.0
17	300	8.4						3.0
18	300	9.0						3.1
19	330	5.8						3.0
20	300	7.4						3.1
21	300	5.8						3.1
22	300	5.0						3.1
23	270	4.7						3.3

Time: Local.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 55

Madras, India (13.0°N, 80.2°E) January **1953

Time	* foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00							
01							
02							
03							
04							
05							
06							
07	330 5.2						3.0
08	340 6.8						2.9
09	390 8.0						2.7
10	420 7.6						2.6
11	420 7.4						2.5
12	420 7.6						2.5
13	420 8.0						2.5
14	420 8.8						2.5
15	420 9.0						2.6
16	390 9.2						2.6
17	390 9.0						2.6
18	360 8.5						2.7
19	360 8.2						2.8
20	360 7.3						2.8
21	360 6.9						2.9
22	330 5.8						2.9
23							

Time: Local.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 56

Tiruchy, India (10.8°N, 78.8°E) January **1953

Time	* foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00							
01							
02							
03							
04							
05							
06	360 3.8						2.8
07	390 5.0						2.7
08	450 7.1						2.4
09	480 7.2						2.3
10	480 7.3						2.3
11	510 7.4						2.2
12	540 7.4						2.2
13	540 7.8						2.2
14	540 7.9						2.2
15	510 8.2						2.2
16	510 8.2						2.2
17	510 7.8						2.2
18	480 7.6						2.3
19	460 7.4						2.4
20	420 7.2						2.4
21	420 6.9						2.5
22	420 (6.7)						(2.5)
23							

Time: Local.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 57*

Falkland Is. (51.7°S, 57.8°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.0					3.0	2.7
01	280	5.6					3.0	2.8
02	280	5.6					2.7	2.8
03	285	4.8					2.0	2.9
04	270	4.8	(270)		145	1.4	2.0	2.9
05	280	5.1	250	3.2	130	1.9	2.8	2.9
06	310	5.6	245	3.7	115	2.3	4.8	2.8
07	370	5.2	245	4.0	105	2.7	5.7	2.8
08	390	5.2	230	4.1	105	3.0	5.6	2.7
09	380	5.7	220	4.3	105	3.1	5.9	2.7
10	400	6.2	220	4.4	100	3.2	6.0	2.6
11	350	6.7	220	4.5	100	3.3	6.0	2.8
12	350	6.7	215	4.4	100	3.4	5.9	2.9
13	350	5.8	220	4.4	100	3.3	5.8	2.9
14	350	5.6	215	4.4	100	3.2	5.8	2.9
15	355	5.6	220	4.3	105	3.1	5.3	3.0
16	340	5.7	225	4.2	105	3.0	5.4	3.0
17	310	5.8	230	4.0	110	2.7	5.0	3.0
18	290	5.7	230	3.7	110	2.3	5.2	3.1
19	260	5.8	(250)		125	2.0	3.2	3.1
20	275	5.4					4.0	2.8
21	300	6.0					4.4	2.7
22	290	6.0					4.0	2.7
23	290	6.2					3.8	2.7

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 58*

Port Lockroy (64.8°S, 63.5°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	7.4						
01	265	7.2						
02	280	7.1						
03	285	7.0						
04	290	6.4	(235)	(2.9)				
05	290	5.6	(235)	(3.2)			3.5	
06	(310)	5.4		(3.5)	(120)	(2.5)	4.6	
07	(330)	5.0	(225)	(3.7)				
08	(300)	5.0	(215)	(3.9)	(115)	(2.7)	4.8	
09	325	5.0	(205)	4.0	105	2.9	4.8	
10	(320)	5.4		(4.2)	(100)	(3.0)	5.3	
11	335	5.2		4.3	(105)	(3.1)	5.2	
12	335	5.0	210	4.3	105	3.1	4.8	
13	(355)	5.0		(4.3)	(100)	(3.1)		
14	(310)	5.1	(210)	(4.2)	(105)	(3.1)	(4.3)	
15	(350)	5.0	(200)	4.2			4.4	
16	(355)	4.9		(4.1)				
17		4.9					5.4	
18	(280)	5.4	(215)	(3.7)			4.5	
19	(295)	5.2						
20	(260)	5.2	(225)					
21	270	6.0						
22	275	6.8						
23	260	7.0					3.4	

Time: 60.0°W.
Sweep: 1.1 Mc to 16.0 Mc, manual operation.
*Average values except foF2 and fEs, which are median values.

Table 59

Tananarive, Madagascar (18.8°S, 47.8°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	6.1						3.1
01	255	5.5					2.0	3.1
02	260	4.9						3.0
03	250	4.3						3.2
04	250	3.4						3.2
05	262	3.2						3.1
06	250	4.9	---	---	125	1.9	2.2	3.2
07	312	5.9	240	4.1	121	2.6	2.9	3.1
08	320	6.7	230	4.4	121	3.0	3.2	3.0
09	325	7.8	225	4.5	119	3.2	3.0	3.0
10	330	8.3	228	4.6	121	3.4	3.6	2.9
11	330	8.8	220	4.7	121	3.4	3.6	2.9
12	320	9.4	220	4.6	119	3.6	3.4	2.9
13	318	9.5	235	4.6	119	3.5	3.2	3.0
14	310	9.4	230	4.5	121	3.3	2.9	3.0
15	310	8.9	235	4.4	121	3.2		3.0
16	302	8.6	235	4.2	121	2.9	2.8	3.0
17	285	8.9	240	---	126	2.4	3.3	3.0
18	260	8.4			---	---	3.4	3.1
19	255	7.9					3.3	3.0
20	260	7.4					2.8	3.1
21	260	6.7					2.2	3.0
22	280	6.4					2.1	2.9
23	280	6.2					1.7	2.9

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 60 *

Ibadan, Nigeria (7.4°N, 4.0°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(240)	---						
01	(235)	---					(1.9)	
02	(230)	---						
03	(225)#	---						
04	(225)#	---						
05	(230)#	---						
06	(255)#	---			(120)#	(2.2)#		
07	(270)#	---	(245)#		(117)#	(2.6)#		
08	(270)#	(8.5)	(210)#	(4.2)#	(111)#	(3.1)#	(5.2)	
09	(300)	>7.4	(205)#	(4.6)	(116)#	(3.3)#	(5.0)	
10	(340)#	(7.4)	(205)	(4.7)#	(106)#	(3.6)#	(5.0)	
11	(335)	(8.5)	(205)	(4.7)	(109)#		(5.1)	
12	(340)	(8.8)	(200)#	(4.6)#	(102)#	(3.6)#	(10.1)	
13	(320)#	(9.0)	(195)#	(4.6)#	(103)	(3.6)#	(5.6)	
14	(320)#	---	(200)#	(4.2)#	(109)#			
15	(310)#	---	(190)#	(4.1)#	(105)#	(3.0)#		
16	(250)#	---	(210)#	(2.7)#	(110)#	(2.5)#		
17	(280)#	---			(116)#			
18	(295)	(9.1)					(2.3)	
19	(310)	---					(2.9)	
20	(275)	---						
21	(255)#	---						
22	(245)	---						
23	(250)#	---						

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.
#Indicates less than 5 values.

Table 61

Lulea, Sweden (65.6°N, 22.1°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.0	270	---	---	E	2.6	
01								
02	340	4.0	275	---	---	E	2.4	
03								
04	360	4.2	235	3.2	115	2.0	2.8	
05								
06	375	4.5	220	3.7	115	2.5	3.0	
07								
08	390	4.8	210	4.0	105	2.8	3.4	
09								
10	390	4.9	215	4.2	105	3.0		
11								
12	370	4.8	210	4.2	105	2.9	3.1	
13								
14	380	4.9	210	4.2	105	2.9	3.0	
15								
16	360	4.8	210	4.0	110	2.7		
17								
18	300	4.6	230	---	120	2.4	2.9	
19								
20	300	4.5	250	---	130	1.8	2.0	
21								
22	310	4.2	270	---	---	E	2.7	
23								

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 6 minutes, automatic operation.

Table 62

Dakar, French W. Africa (14.6°N, 17.4°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	(4.4)					3.0	(2.6)
01	330	3.9					3.4	(2.8)
02	348	(4.0)					3.8	(2.8)
03	335	(3.8)					4.2	(2.8)
04	305	(3.6)					4.0	(3.0)
05	290	3.8					4.4	---
06	240	5.1	---	---	---	1.8	4.4	3.4
07	250	6.2	230	---	105	2.6	4.5	3.5
08	275	6.0	220	---	105	---	4.5	3.2
09	325	6.4	208	4.5	103	3.2	4.5	3.0
10	368	6.8	220	4.7	101	3.4	4.5	2.7
11	390	7.8	210	4.7	102	---	4.5	2.6
12	400	8.6	210	4.6	105	3.6	4.4	2.6
13	405	9.6	218	4.6	105	3.5	4.4	2.6
14	380	10.2	208	4.6	105	3.5	4.5	2.7
15	350	11.2	220	4.6	105	3.2	4.5	2.8
16	310	11.6	220	4.3	105	2.9	4.2	3.0
17	290	10.8	230	---	111	2.6	3.2	3.1
18	252	9.8	235	---	134	1.9	3.1	3.0
19	240	8.4					2.8	2.9
20	295	6.4					3.1	2.8
21	330	4.8					3.1	2.6
22	345	4.6					3.0	2.5
23	345	4.2					3.2	2.6

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 63

Dakar, French West Africa (14.6°N, 17.4°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	342	(3.9)					3.2	(2.8)
01	310	(3.4)					3.4	(2.8)
02	280	(3.3)					2.5	(2.9)
03	300	3.6					3.4	(2.9)
04	270	3.7					2.8	(3.2)
05	240	3.4					3.3	(3.3)
06	235	5.0	---	---	---	1.7	3.6	3.5
07	242	5.8	230	---	107	2.5	4.0	3.4
08	310	6.2	220	---	105	3.0	4.2	3.2
09	325	7.0	220	---	105	3.3	4.4	3.0
10	375	7.3	225	4.7	105	3.5	4.0	2.7
11	425	8.7	220	4.7	104	(3.6)	4.0	2.5
12	430	9.6	210	4.6	106	3.7	4.0	2.6
13	370	10.8	210	4.7	105	3.6	4.2	2.7
14	350	11.8	210	4.6	102	3.5	4.1	2.8
15	325	11.6	222	4.4	105	3.3	3.6	(2.8)
16	305	11.8	225	4.3	107	2.9	3.4	3.0
17	270	11.6	230	---	109	2.4	4.0	3.0
18	245	>11.0	---	---	---	<1.8	3.4	3.0
19	240	8.7					3.0	3.0
20	290	(7.0)					2.5	2.7
21	< 350	4.6					5.3	2.6
22	360	4.6					3.0	(2.5)
23	360	4.0					2.8	(2.7)

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

TABLE 64

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h' F2 (Characteristic), Km (Unit), August (Month), 1953

Observed at Washington, D.C.

Lot 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., J.W.P., E.J.W.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(270)^{S}	(280)^{S}	S	A	E	(270)^{A}	310	[310]^{A}	310	(400)^{A}	[380]^{A}	360	350	G	G	360	440	400	310	(270)^{A}	(270)^{A}	260	(240)^{S}	(300)^{S}
2	290	(290)^{S}	(280)^{S}	(310)^{S}	[290]^{S}	(260)^{S}	230	G	450	[440]^{A}	420	540	390	370	370	430	340	300	280	240	210	250	(280)^{A}	250
3	260	280	280	260	(280)^{S}	(250)^{S}	230	G	450	(350)^{A}	370	370	410	430	350	360	350	330	220	260	(280)^{A}	280	240	250
4	230	250	(280)^{S}	280	280	(270)^{S}	230	330	290	340	280	330	500	340	380	310	300	310^{H}	260	230	220	250	[280]^{A}	(300)^{A}
5	(280)^{S}	S	S	A	A	(280)^{S}	260	[300]^{A}	(350)^{A}	320	A	A	A	A	380	360	380	320	330	250	220	(260)^{A}	250	(260)^{S}
6	(270)^{S}	(310)^{S}	(300)^{S}	(300)^{S}	[280]^{S}	(270)^{S}	230	G	A	480	(410)^{A}	340	380	400	400	400	350	390	290	230	220	(270)^{A}	280	260
7	260	(280)^{S}	260	S	S	(280)^{S}	270	260	340	300	350	480	320	430	420	370	390	350	310	250	230	(240)^{A}	(250)^{S}	(250)^{S}
8	240	230	(250)^{S}	(280)^{S}	[280]^{S}	(270)^{S}	230	[260]^{L}	300	280	300	360	410	350	350	380	320	290	280	240	(240)^{A}	240	250	(270)^{S}
9	240	300	270	280	(270)^{S}	(270)^{S}	(340)^{L}	450	G	530	(570)^{S}	440	370	460	420	440	410	320	310	(240)^{A}	(250)^{A}	(250)^{A}	(250)^{S}	(310)^{S}
10	280	280	(260)^{S}	(300)^{S}	[300]^{S}	(310)^{S}	240	C	(480)^{S}	460	360	G	470	440	430	420	340	330	300	240	250	260	250	280
11	250	290	250	290	(270)^{S}	240	240	G	G	G	460	530	G	(480)^{S}	(500)^{S}	390	410	360	310	250	(240)^{S}	250	250	240^{F}
12	300	(300)^{S}	310^{F}	[300]^{F}	(290)^{S}	(270)^{S}	250^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	400^{K}	330^{K}	280^{K}	280^{K}	250^{K}	280^{K}	260
13	260	(300)^{S}	(280)^{S}	E	E	S	230^{K}	G	G	G	G	740	470	410	410	400	360	320	290	240	220	210^{H}	270	(280)^{A}
14	280	(300)^{S}	250	250	(320)^{L}	280	230	G	460	360	G	530	510	430	360	350	330	300	260	230	(260)^{A}	250	250	280
15	270	(300)^{A}	(270)^{S}	280	320	[280]^{S}	230	250	300	320	280	360	350	350	320	350	320	280	260	240	240	(230)^{A}	230	(230)^{S}
16	270	290	(290)^{A}	270	260	250	240	G	460	390	620	320	400	450	360	400	350	330	300	230	230	250	(260)^{S}	270
17	270	230	250	250	260	(250)^{S}	220	280	260	270	310	380	330	330	310	320	300	270	260	220	220	210	(280)^{H}	A
18	A	A	A	(270)^{A}	(260)^{A}	260	210^{H}	(250)^{L}	310	310	400	480	G	400	340	330	340	300	[280]^{A}	260	240	240	(280)^{A}	250
19	250	280	(280)^{S}	(270)^{S}	(300)^{S}	(280)^{S}	230	(320)^{L}	M	M	360	470	340	330	[320]^{A}	320	(310)^{A}	[300]^{A}	300	240	220	200	240	A
20	A	A	(260)^{S}	A	S	260	230	(230)^{L}	250	270	300	310	340	440	320	350	320	280	260	210	(230)^{A}	220	[260]^{A}	(290)^{A}
21	(290)^{S}	(290)^{S}	260	270	(270)^{S}	(250)^{S}	230	270	290	300	330	330	320	350	330	320	320	280	260	240	220	230	230	240
22	260	270	260	250	260	250	230	280^{H}	260	270	310	310	360	330	320	300	300	280	260	230	220	220	[240]^{A}	270
23	(290)^{S}	280	250	260	260	(260)^{S}	230	220	300^{K}	330^{K}	280^{K}	280^{K}	350^{K}	430^{K}	510^{K}	370^{K}	400^{K}	340^{K}	300^{K}	230^{K}	230^{K}	240^{K}	240^{K}	270^{K}
24	250^{K}	270^{K}	(310)$^{S}_{K}$	(320)$^{S}_{K}$	E^{K}	S^{K}	250^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	610^{K}	510^{K}	450^{K}	440^{K}	300^{K}	250^{K}	220^{K}	(260)$^{S}_{K}$	(270)$^{S}_{K}$	S^{K}
25	S^{K}	E^{K}	E^{K}	E^{K}	E^{K}	S^{K}	240^{K}	G^{K}	G^{K}	480^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	(500)$^{S}_{K}$	550^{K}	A^{K}	A^{K}	260^{K}	230^{K}	250	(250)^{S}	(290)^{S}
26	(290)^{S}	[280]^{S}	280	E	E	E	250	G	370	360	380	460	360	400	460	350	440^{H}	350	310	240	240	220	(270)^{S}	(280)^{S}
27	(290)^{S}	(290)^{S}	270	(300E	E^{K}	E^{K}	(310)$^{L}_{K}$	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	480^{K}	420^{K}	380^{K}	280^{K}	240^{K}	220^{K}	[300]$^{A}_{K}$	(290)^{S}	(280)$^{S}_{K}$
28	(220)$^{S}_{K}$	(300)$^{S}_{K}$	(300)$^{S}_{K}$	E^{K}	E^{K}	E^{K}	270^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	420^{K}	G^{K}	450^{K}	350^{K}	280^{K}	240^{K}	220^{K}	230^{K}	(250)$^{S}_{K}$	E^{K}
29	(280)$^{S}_{K}$	(290)$^{S}_{K}$	E^{K}	E^{K}	E^{K}	E^{K}	270^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	530^{K}	(380)$^{L}_{K}$	330^{K}	250^{K}	230^{K}	220^{K}	S^{K}	E^{K}
30	S^{K}	E^{K}	E^{K}	E^{K}	E^{K}	E^{K}	230^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	(480)$^{S}_{K}$	390^{K}	250^{K}	260^{K}	250^{K}	250^{K}	(280)$^{A}_{K}$	S^{K}
31	S^{K}	E^{K}	E^{K}	E^{K}	E^{K}	C^{K}	C^{K}	C^{K}	G^{K}	G^{K}	G^{K}	G^{K}	480^{K}	G^{K}	G^{K}	G^{K}	460^{K}	400^{K}	(320)$^{L}_{K}$	250^{K}	230^{K}	240^{K}	(270)$^{S}_{K}$	E^{K}
Median	270	(290)	(270)	280	(280)	(270)	230	G	450	400	400	480	410	430	410	380	360	330	290	240	230	250	(250)	270
Count	26	27	26	22	22	26	30	29	29	30	30	30	30	30	31	31	31	30	30	31	31	31	30	24

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 65

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), August (Month), 1953

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W — 75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C., J.W.P., E.J.W.

Calculated by: Mc C., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.5)S	2.3	(2.0)JS	A	<1.0E	2.3	3.6	[4.2]A	4.7	(4.7)A	[4.8]A	4.8	4.8	<4.0G	<4.0G	4.7	4.5	4.5	4.6	4.7	4.7	4.0H	(3.3)S	2.7
2	2.6	2.4	(2.1)S	1.8.	(1.5)JS	(2.2)S	3.3	<3.6G	4.3	[4.4]A	4.5	4.5	4.8	4.9	4.9	4.5	4.8	4.8	4.6	5.0	4.0	3.3	3.1	3.0
3	2.5	2.5	2.3	2.1	1.8	2.2	3.5	<3.5G	4.2	4.7	4.7	4.9	4.6	4.7	4.8	4.9	4.7	4.5	4.4	4.8	5.2	4.4F	(4.0)S	(3.7)S
4	3.2F	2.7	2.1	1.8JS	(1.8)S	2.3	3.5	4.4	5.2	5.0	5.4	4.9	4.6	4.9	5.0	5.2	4.9	4.7N	4.8	5.2	4.8	3.6	[3.0]A	(2.4)AP
5	2.3	2.2	2.1	A	A	[2.6]SA	3.8	[4.1]A	4.4	4.7	[4.6]A	[4.9]A	A	A	4.7	4.7	4.7	4.8	4.7	4.9	5.0	4.0JS	3.2	2.7
6	2.4	(2.1)S	(1.9)S	(1.7)PS	1.6JS	2.2	3.4	<3.3G	A	4.4	4.7	4.9	4.7	4.8	4.9	4.8	4.8	3.8	5.0	5.4	4.5	3.8	3.2	3.4
7	2.7	2.5	2.3	2.0	1.9	2.3	3.5	3.7	4.7	5.0	4.5	4.6	5.0	4.7	4.7	4.7	4.6	4.7	4.7	(5.2)PS	5.7	5.0JS	3.9S	3.5JF
8	3.3JS	2.7	2.4	(1.9)JF	1.9F	2.2	3.5	3.8	4.9	5.4	5.7	5.1	4.9	5.0	5.0	4.9	5.2	4.9	5.0	5.2	5.0	4.5	3.6	3.2
9	2.9	2.6	2.5	2.2F	2.1F	2.1	3.3	3.8	<3.7G	4.2	(4.3)S	4.7	4.8	4.7	4.7S	4.5	4.6	5.3	5.0	5.0	5.0	4.4	4.1	3.4
10	3.5	3.0	2.6	2.3	(1.7)JS	(2.0)JS	2.8	[3.4]C	(4.1)PS	(4.5)PS	(4.6)S	<4.2G	4.7	4.9	4.7	4.7	5.0	4.8	5.2	5.0	4.9	4.5	4.2	3.9
11	3.5	2.9	2.6	2.2	2.1	2.3	3.3	<3.3G	<3.7G	<4.0G	4.5	4.8	<4.4G	(4.6)PS	(4.9)PS	4.8	4.6H	4.9	5.2	(5.8)JS	5.6	5.3S	4.6S	(3.0)F
12	(2.8)PF	(2.9)PF	[1.9]F	F	SF	2.3F	2.9K	<3.3GK	<3.7GK	<4.0GK	<4.0GK	<4.1GK	<4.1GK	<4.1GK	<4.1GK	<3.9GK	<3.8GK	4.2K	4.2K	3.9K	K4.2JS	4.2K	4.1K	3.8
13	3.0	2.5	1.8	<1.0E	<1.0F	1.9	3.0	<3.5G	<3.8G	<3.9G	<4.1G	4.4	4.6	5.0	5.0	5.2	5.5	5.8	6.4	6.5	6.0	4.6JS	4.1	3.2F
14	(3.2)F	2.8JF	2.4F	(1.8)FS	[2.0]F	2.2JS	3.2	<3.5G	4.2	4.7	<4.3G	4.6	4.7	5.0	5.2	5.3	5.2	5.2	5.0	5.0	4.8	(4.3)JS	(3.5)JS	(3.0)SF
15	(3.1)S	2.7	2.6F	(2.3)F	F	FS	4.3	5.2	(5.0)FH	5.6	6.2	5.4	5.6	5.8	5.8	5.8	6.2	6.0	6.0	6.2	5.8	5.2F	4.9	3.2
16	3.0ES	2.9F	2.6F	2.6	2.1	2.0	3.4	<3.5G	4.2	4.6	4.4	5.6	4.8	4.9	5.1	4.8	5.0	5.0	5.2	5.2	5.0	4.5	4.0	3.6JS
17	3.5	3.4JS	2.4	2.3JS	2.4	(2.4)JS	3.9	4.8	6.0	6.0	5.3	5.4	5.4	5.6	5.9	6.7	5.8	5.8	5.8	5.8	5.8	4.5SF	(3.8)SF	A
18	A	3.0	2.7F	2.7F	2.5	(2.5)FS	3.5F	4.1	4.5	4.9	4.7	4.7	<4.4G	4.9	5.3	5.2	4.8	5.0	4.5	5.0	5.4	4.2F	4.2	(3.6)S
19	3.1	2.9	2.6	2.4	2.2	(2.3)JS	3.4	4.2	M	M	4.9	4.6	5.0	5.3	[5.2]A	5.3	(4.9)A	[5.0]A	5.0	5.2	5.8	(3.9)S	3.2	A
20	A	A	(2.2)AF	AS	F	(2.7)HF	4.2	4.5	5.6	5.6	5.2	5.6	5.2	5.0	5.2	4.8	5.0	5.2	5.4	5.4	5.0	4.1	[3.2]A	2.8F
21	2.8	2.7JS	2.7F	2.5JE	2.2F	2.2F	3.8	4.5	4.9	5.2	5.2	5.3	5.4	5.1	5.2	5.2	5.0	4.8	4.7	5.2	5.4	(4.6)JS	(3.9)JS	3.3
22	3.6	3.2	3.1	3.0	2.7	2.8F	3.5	(4.2)H	5.0	5.2	5.4	5.8	5.6	5.6	5.6	5.6	5.2	5.3	5.8	6.0	5.6	4.4	4.0	3.7JS
23	3.1	3.0F	3.0	2.4	2.0	(1.9)S	3.5	4.2	4.8K	5.6K	6.6K	7.0K	5.3K	4.9K	4.5K	4.7K	4.8K	5.2K	7.0K	8.6K	6.4K	6.4K	4.5K	3.6K
24	K(3.5)JS	2.7K	2.2FK	(1.7)SK	<1.0EK	K1.5JS	2.7K	<3.1GK	<3.4GK	<3.6GK	<3.7GK	<3.9GK	<4.0GK	<3.9GK	4.1K	4.2K	4.1K	4.0K	4.4K	4.7K	4.9K	2.6K	K2.2JS	2.1K
25	2.0K	1.8K	K1.6JS	K1.5JS	K1.4JS	FK	2.8K	<3.0GK	<3.6GK	4.0K	<3.9GK	<3.9GK	<4.0GK	<4.0GK	<3.9GK	K(4.1)JS	4.0K	AK	AK	4.2K	4.3K	3.5	2.9	2.4
26	2.4	2.1	1.8	(1.6)JS	(1.4)JS	<1.0E	3.0	<3.7G	4.1	4.5	4.7	4.5	4.8	4.6	4.5	4.5	4.0H	4.5	4.5	(4.9)S	5.0	4.2	3.0	2.9
27	2.8	2.4	2.2	1.8	K1.5JS	<1.0EK	2.6K	<3.0GK	<3.4GK	<3.5GK	<3.7GK	<3.9GK	<3.9GK	<3.9GK	<3.8GK	4.1K	4.2K	4.3K	4.4K	4.7K	3.7K	2.8K	2.3K	2.2K
28	(2.0)FK	(2.2)FK	(2.0)FK	K1.7JF	K1.6JS	K1.4JS	2.6K	<3.2GK	<3.4GK	<3.6GK	<3.8GK	<3.9GK	<4.0GK	<4.0GK	4.3K	<3.9GK	4.0K	4.2K	4.3K	4.5K	4.5K	3.4K	2.5K	K1.8JS
29	K2.0JS	2.0K	K(1.6)JS	K(1.7)JS	(1.7)SK	<1.0EK	2.9K	<3.3GK	<3.5GK	<3.7GK	<3.8GK	<3.9GK	<4.0GK	<3.9GK	<3.8GK	<3.8GK	3.9K	3.8K	4.1K	4.3K	4.5K	3.3K	2.4K	K1.9JS
30	1.9K	<1.0EK	<1.0EK	<1.0EK	<1.0EK	<1.0EK	2.5K	<3.2GH	<3.4GK	<3.7GK	<3.8GK	<3.9GK	<3.9GK	<4.0GK	<3.9GK	<3.7GK	(4.0)SK	4.1K	4.0K	3.9K	3.5K	K(3.3)FS	K2.8JA	1.9K
31	1.9K	<1.0EK	<1.0EK	<1.0EK	<1.0EK	CK	CK	CK	<3.3GK	<3.7GK	<4.0GK	<4.0GH	4.3K	<4.0GK	<3.9GK	<3.8GK	4.0K	4.0K	3.7K	4.2K	4.2K	3.2K	2.4K	(1.8)SK
Median	2.8	2.6	2.2	1.9	1.8	2.2	3.4	<3.6	4.2	4.6	4.6	4.7	4.7	4.8	4.8	4.7	4.8	4.8	4.8	5.0	5.0	4.2	3.5	3.0
Count	29	30	31	27	27	28	30	30	29	30	31	31	30	30	31	31	31	30	30	31	31	31	31	20

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 66

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1945

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), August (Month), 1953

Observed at Washington, D.C.

Lat 38.7° N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., J.W.P., E.J.W.

Calculated by: McC., E.J.W.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	2.2	2.2	(2.0)S	[1.9]A	(1.8)S	3.2	3.8	[4.1]A	4.4H	[4.4]A	4.5	(5.0)S	4.4	4.4	5.0	<4.0G	4.6	4.6S	4.7	4.7	(4.4)S	3.6	3.0	(2.7)S
2	2.4	2.2	(2.0)S	1.7S	<1.0E	3.1	3.8	4.3	(4.4)A	4.6	4.7	4.7	4.8	4.9	4.7	4.6	4.9	4.9	4.8	5.0	(3.6)S	3.1	3.0	2.8
3	2.5	2.4	2.2	2.0	1.8	2.7	3.7	4.1S	4.5	4.9	4.6	4.4	4.6	4.8	4.8	4.7	4.5	4.2	4.6	5.0	4.8	4.5F	4.0S	3.5S
4	2.8	2.3	2.0	1.8S	1.9	3.0	3.9	4.7	5.3	5.0	5.0	4.7	4.8	4.9	5.0	5.0	4.9	5.0	4.9	5.2	4.2	3.2A	(2.7)A	(2.2)S
5	2.2	[2.1]A	2.0F	[2.0]A	(2.0)S	3.3	A	A	[4.6]A	4.3	4.8	5.0	A	A	4.6	4.8	4.7H	4.8	4.7	5.0	(4.1)A	(3.4)S	3.1	2.5F
6	2.2	1.9	1.8	(1.7)S	1.8	2.9	3.7	[4.0]A	4.3	4.9	5.2	4.7H	4.6	4.8	5.0	4.8	(3.8)H	4.7	5.2	5.2	4.2	3.4	3.0	2.7
7	2.6	2.4	2.2	(1.9)S	[2.0]A	3.7	4.1S	5.0	5.2	4.7	4.8	4.9	4.7	4.7	4.6	4.5	4.8	4.9	[5.5]S	(5.2)F	[4.0]F	3.8S	3.3T	3.1S
8	[2.9]S	(2.9)S	2.2	1.9F	(1.8)S	2.9	3.7	4.5	5.2	5.5	5.4	5.0	5.0	(4.8)S	4.8	5.1	5.2	5.0	5.2	5.4	4.3	3.6F	3.3	3.3
9	2.8	2.6S	2.4	2.1S	1.9S	2.8	(3.5)H	[4.3]H	(4.1)S	(4.2)S	<4.1G	4.8	4.8	4.6	4.6	4.6	4.7	4.9	5.3	4.9	4.9	4.1	3.5	3.5
10	3.2	3.0	2.3F	[2.0]C	(1.7)S	2.4	3.7	<3.7G	<4.0G	4.7	<4.3G	4.7	4.9	4.8	4.7	5.0	5.0	4.9	5.4	5.2	4.6	4.3	4.0	3.6S
11	3.0F	3.0	2.4F	(2.4)S	1.9	3.0	3.5	<3.6G	<3.8G	<4.1G	4.7	5.2	(4.3)S	4.9	(4.8)E	4.6F	4.7F	5.0	5.6	5.8	4.8S	(4.8)F	4.1S	(3.0)F
12	(2.8)S	(2.8)F	F	F S	F S	2.7F	3.4K	<3.6K G	<3.8K G	<4.0K G	<4.1K G	<4.1K G	<4.1K G	<4.1K G	<4.0K G	<3.9K G	4.2K	4.0S J	4.0K	4.0K	4.4K	4.2K	4.0K	3.5
13	2.6	2.0	1.8S J	<1.0E	<1.0E	2.6	<3.3G	<3.6G	<3.9G	<4.0A G	<4.1A G	<4.2G	4.8	5.0	5.1	5.4	5.6	6.2	6.6	6.6	5.4	(4.2)S J	(3.7)S J	3.0F
14	2.6F	2.6F	2.0F	[1.8]F S	(1.7)F J	2.8	3.5	4.0S J	4.5	4.6	<4.3G	4.7	5.0	5.0	5.1	5.1	5.2	5.2	5.0	5.0	(4.3)S	(3.9)S	(3.2)S	(3.2)F
15	[2.8]A	3.0	2.5	2.3F	[2.6]A	3.0	4.4	5.2	5.2H	6.0	5.8	5.6	5.6	6.0	5.7	6.1	6.2	5.8	5.8	6.2	5.8	4.9	(4.2)S	3.1
16	2.8F	2.9F	2.7	2.3F	1.9	2.8	3.6	4.0	4.4	4.8	4.8	5.6	4.6	5.0	5.0	4.8	4.8	5.0	5.3	5.2	4.7	4.5	(3.8)S	3.5
17	3.5	(3.0)S	2.5	2.3	2.5	3.2	4.5	5.3	6.4	5.6	5.4	5.8	5.6	5.8	5.6	5.7	5.8	5.8	5.8	5.8	5.0	(3.5)F S	A	A
18	A	(3.2)F S	3.0	2.7F	[2.5]F	3.0	3.5	4.4	4.7H	5.0	(4.9)S	<(4.4)A G	4.6	5.1	5.4	5.0	4.7	4.7	[4.8]A	5.4	(4.7)S	4.2	(3.6)S	3.5
19	3.0	2.8	2.6	2.2S J	2.2	2.7	3.9	M	M	4.9	5.0	5.0	5.0	(5.2)A	5.2	5.2	[5.0]A	5.0	4.9	5.6	4.8	3.3F	A	A
20	A	A	A	A	(2.7)F J	(3.5)S J	4.9	5.5	5.8	5.4	5.3	5.4	5.2	5.3	5.0	4.9	5.0	5.3	5.6	5.6	4.5	3.5	2.9	2.7F
21	2.7K	2.6F	2.6S	(2.8)S J	[2.2]A	3.0	4.3	4.6	5.3	5.2	5.1	5.4	5.2	5.1	5.1	5.1	5.0	4.8	4.8	5.6	4.8	4.2	(3.5)S	3.5S J
22	3.2S J	3.2	3.1	2.9S J	(2.4)S K	3.4F	4.6	5.0	5.2	5.1	5.4	5.6	5.6	5.6	5.6	5.5	5.2	5.4A J	6.0	5.8	5.2	4.2	(4.0)S	3.3
23	3.0F	3.1F	(2.6)S	2.3F	(1.8)F	2.8	3.5	4.8	(5.0)H	5.8K	7.4K	6.2K	4.8K	4.7K	4.3K	4.4K	4.9K	5.6K	8.0K	7.6K	6.4K	5.0K	4.4K	3.2K
24	(3.0)H	2.4F K	1.9K F	1.4S J	<1.0E	(5.2)S K	<2.9G K	<3.3G K	<3.5G K	<3.7G K	<3.9G K	<4.0G K	<3.9G K	4.3K	<3.8G K	4.1K	(3.9)K S	4.2K	4.7K	4.9K	4.6K	2.6K	2.2K	(2.1)S J K
25	1.9K	1.6K	1.5S J K	1.5S J	<1.0E	2.4K	<3.0G K	<3.3G K	<3.6G K	<3.8G K	<3.9G K	<4.0G K	<4.0G K	<3.9G K	<3.8G K	4.1K	4.0K	[4.0]A	3.9K	4.4K	4.3K	3.5	2.2	2.4
26	2.2	1.9	1.8	1.5S J	<1.0E	2.4	3.5	3.9	4.5	4.5	4.4	5.0	4.6	4.8	4.6	4.3	4.0	4.4	4.7	4.8	4.7	3.2	2.8	2.8
27	2.7	2.3	2.0	1.7S J	<1.0E	2.1K F	2.9K	<3.3K G	<3.5K G	<3.6K G	<3.9K G	<3.9K G	<3.9K G	<3.9K G	<3.8K G	4.1K	4.1K	[4.4]A	4.6K	4.7K	3.3K	2.4K	2.4K	2.1K
28	(2.2)K F	(2.0)K	1.8K	(1.6)S J K	1.3S J	2.1K	3.0K	<3.3K G	<3.4K G	<3.7K G	<3.8K G	<4.0K G	<4.0K G	4.2K	4.1K	3.9K	4.0K	4.2S J	4.1K	4.6K	3.7K	2.8K	2.3K	1.7K
29	2.2K	(1.6)S J K	1.7S J K	1.7S J K	<1.0E	2.0K	<3.1K G	<3.5K G	<3.6K G	<3.7K G	<3.9K G	<3.9K G	<4.0K G	<3.9K G	<3.8K G	<3.7K G	4.0K	3.8K	4.2K	4.7K	4.0K	3.2K	2.0S J	1.9K
30	K (1.7)S J	K (1.6)S J	1.9K	<1.0K E	<1.0K E	2.1K	3.0K	<3.3K G	<3.6K G	<3.8K G	<3.9K G	<3.9K G	<4.0K G	<3.9K G	<3.9K G	K (3.9)S J	4.0K	4.0K	3.9K	4.1K	3.7K	2.8K	2.3K	2.0K
31	K 1.5S J	<1.0K E	<1.0K E	<1.0K E	<1.0K E	C K	(2.2)K S	<3.1K G	<3.4K G	<3.7K G	<4.0K G	<4.0K G	<4.0K G	<4.0K G	<3.9K G	<3.8K G	4.0K	3.7K	4.0K	4.4K	3.7K	2.8K	2.2K	A K
Median	2.7	2.4	2.0	1.9	(1.8)	2.8	3.6	4.0	4.4	4.6	4.7	4.7	4.6	4.8	4.8	4.7	4.7	4.9	4.9	5.2	4.6	3.6	3.2	3.0
Count	29	30	29	29	30	30	30	29	30	31	31	31	30	30	31	31	3	31	31	31	31	31	29	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 mc

Manual ☐ Automatic ☒

TABLE 67

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), August (Month), 1953

Observed at Washington, D.C

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., J.W.P., E.J.W.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							230	A	A	A	A	170	230	190	200	(240)B	220	220	250					
2							Q	210	210	[200]A	200	200	190	190	200	200	210	210	200					
3							Q	200	240	[220]A	200	210	210	190H	210H	190	190H	200	210					
4							2	220	(220)A	200	200	190	190	190	210	(210)A	A	A	210					
5							Q	A	A	A	A	A	A	A	200	220	230	210	210					
6							2	A	A	(210)A	[200]A	180	180	210	200	190	230	250	220					
7							Q	210	200	190	180	180	160	170H	180H	210	210	230	220					
8							Q	210	210	(210)A	180H	230	190H	200H	210	210	200H	230	(210)S					
9							230	210	210	(220)A	A	A	200	200	200	210H	210H	A	A					
10							Q	C	190	200H	190H	190H	190H	230	210	220	240	220	240					
11							230	230	230	230	200	210	180	180	240	220	210	220	(240)A					
12							Q K	(220)AK	200K	190HK	220K	180K	200HK	210K	220K	220K	200K	220K	240K					
13							Q	220	(210)H	[200]A	180	(220)A	[220]A	220	200	180H	220	220	240					
14							Q	200	220	210	190	170	170	190	180H	200	210	220	210					
15							Q	200	200	200	200	230	200	190	200	190	200H	(230)A	(230)A					
16							220	(200)A	(190)A	(230)A	(220)A	(220)A	220	[220]A	230	220	200	220	230					
17							Q	220	(230)A	230	180	(220)A	(200)A	200	190	200	200H	210	(230)A					
18							Q	180	200	210H	170	210	190	200	[200]A	210	210	210	A					
19							Q	210	M	M	200	170H	200	(230)A	A	A	A	A	250					
20							220	200	200	180	170H	200	190	200	200	200H	220	200H	210					
21							200	210	200	190	180	190	220	200	200	210	220	220	200					
22							Q	200	200	180	190	170	200	200	200H	200	A	A	A					
23							200	230	[220]AK	220K	200HK	200K	220K	210K	220K	200K	220K	220K	230K					
24							Q K	220K	220K	210K	200K	200K	200K	[210]AK	220K	210K	210K	220K	250K					
25							Q K	200K	220K	190K	120K	200K	200K	200HK	230K	(210)AK	210K	A K	A K					
26							220	210	210	210	190H	200	210	210	220	210	200	200	230					
27							230K	230K	220K	190K	200K	200K	220K	210K	220K	(220)AK	(220)AK	A K	A K					
28							Q K	230K	210K	200K	210K	200K	190K	220K	200K	200K	210K	220K	240K					
29							230K	220HK	200K	220K	200K	180K	190K	190K	200K	210K	210K	220K	210K					
30							Q K	210K	200K	250K	200K	190K	210K	200K	190HK	200HK	230K	230K	Q K					
31							C K	C K	200K	210K	220K	200K	180K	210K	200K	220K	210HK	230K	240K					
Median							220	210	210	210	200	200	200	200	200	210	210	220	230					
Count							10	26	27	28	28	29	30	30	30	30	28	25	25					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 68

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form accepted June 1946

IONOSPHERIC DATA

foF1 (Characteristic), Mc (Unit) August (Month), 1953

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: McC., J.W.P., E.J.W.

Lat. 38.7°N, Long. 77.1°W — 75°W Mean Time

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							3.0	A	A	A	A	4.0	4.2	4.0	4.0	4.0	3.8	3.7	3.3					
2							Q	3.6	3.8	[3.9]A	4.0	4.2	4.2	4.1	4.1	4.0	3.8	3.6	3.3					
3							Q	3.5	3.9	[4.0]A	4.0	4.2	4.2	4.2H	(4.2)H	4.0	3.9H	3.6	3.3					
4							Q	3.5	3.8	4.0	4.2	4.2	4.3	4.2	4.0	3.9	[3.7]A	3.5	3.2					
5							Q	A	A	4.0	A	A	A	A	4.2	4.1	4.0	3.7	3.4					
6							Q	3.3	[3.6]A	4.0	[4.1]A	4.2	4.2	4.2	4.1	4.0	3.8	3.4	3.3					
7							Q	3.4	3.9	4.0	4.2	4.2	4.2	4.3H	4.2	4.1	3.9	3.7	(3.2)P					
8							Q	3.5	3.9	4.2H	4.2H	4.3	4.4H	4.3H	4.2	4.1	4.0H	3.8	(3.3)P					
9							(3.0)L	3.5	3.7	3.9	4.1	4.2	4.3	4.2	4.1	4.1H	3.9H	A	L					
10							Q	C	3.8	4.1H	4.2H	4.2H	4.3H	4.3	4.2	4.1	4.0	3.7	3.2					
11							L	3.3	3.7	4.0	4.2	4.3	4.4	4.3	4.3	4.2	4.0F	3.8F	(3.3)L					
12							QK	3.3K	3.7K	4.0HK	4.0K	4.1K	4.1HK	4.1K	4.1K	3.9K	3.8K	3.6K	3.3K					
13							Q	3.5	3.8H	3.9	4.1	4.2	4.2	4.2	4.3	4.2H	4.0	3.9	L					
14							Q	3.5F	3.8	4.0	4.3	4.3	4.3	4.4	4.3H	4.2	4.1	3.7	L					
15							Q	L	4.1	4.2	4.2	4.6	4.5	4.4	4.3	4.2	4.2H	3.7	L					
16							L	3.5	(3.7)S	(4.2)A	4.2	[4.2]A	4.2	4.2A	4.3	4.1	4.0	3.8	L					
17							Q	L	4.0	4.2	4.3	4.4	4.4	4.2	(4.3)S	4.3	4.0H	(3.7)L	L					
18							Q	L	4.0	4.1H	4.2	4.4	4.4	4.3	4.2	4.1	4.0	3.7	A					
19							Q	(3.5)L	M	M	4.1	4.3H	4.4	4.3	[4.2]A	(4.0)A	A	A	L					
20							L	L	3.8	4.1	4.1H	4.3	4.4	4.4	4.3	4.1H	4.0	3.6H	2.9					
21							L	L	3.9	4.1	4.2	4.3	4.3	4.3	4.2	4.0	3.9	3.6	L					
22							Q	3.6	4.0	4.1	4.2	4.3	4.3	4.2	4.3H	4.2	A	L	L					
23							2.2	3.4	3.5K	4.0K	4.2HK	4.2K	4.2K	4.2K	4.0K	3.9K	3.7K	3.4K	3.1K					
24							QK	3.1K	3.4K	3.6K	3.7K	3.9K	4.0K	3.9K	3.8K	3.8K	3.7K	3.4K	2.9K					
25							QK	3.0K	3.6K	3.7K	3.9K	3.9K	4.0H	4.0HK	3.9K	3.7K	3.7K	AK	AK					
26							L	3.1	3.7	3.8	4.0H	4.0K	4.2	4.1	4.0	3.9	3.5	3.4	3.0					
27							LK	3.0K	3.4K	3.5K	3.7K	3.9K	3.9K	3.9K	3.8K	3.7K	3.6K	3.3K	LK					
28							QK	3.2K	3.4K	3.6K	3.8K	3.9K	4.0K	4.0K	3.9K	3.9K	3.6K	3.4K	LK					
29							LK	3.3HK	3.5K	3.7K	3.8K	3.9K	4.0K	3.9K	3.8K	3.8K	3.5K	(3.4)LK	LK					
30							QK	3.2K	3.4K	3.7K	3.8K	3.9K	3.9K	4.0K	3.9HK	3.7HK	3.5K	3.4K	QK					
31							CK	CK	3.3K	3.7K	4.0K	4.0K	4.0K	4.0K	3.9K	3.8K	3.7HK	3.3K	LK					
Median							–	3.4	3.8	4.0	4.1	4.2	4.2	4.2	4.2	4.0	3.9	3.6	3.3					
Count							3	22	28	29	29	30	30	30	31	31	29	27	15					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 69

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form accepted June 1946

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), August (Month), 1953

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C., J.W.P., E. J. W.

Calculated by: Mc C., E. J. W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	110	100	100	100	110	110	[110]B	110	110	100					
2							110	110	100	100	100	100	[100]A	100	100	100	110	100	(110)A					
3							A	100	100	100	100	100	100	100	100	100	100	100	100					
4							110	110	100	100	100	100	100	100	100	100	100	100	A					
5							A	(100)A	100	100	100	100	100	100	100	100	[100]A	(100)A	110					
6							110	100	100	100	100	100	100	100	100	100N	110	110	110					
7							110	110	100	100	100	100	100	100	100	(110)A	[120]A	(120)N	120					
8							S	110	100	100	[100]A	100	100	100	100	110	110	110	S					
9							A	110N	110	A	A	A	A	100	110	110	110	110	S					
10							S	C	110	110	A	A	100	100	100	100	100	110	(110)A					
11							(120)S	100	110	100	100	100	100	100	100	[100]A	100	110	(120)S					
12							120K	[110]AK	100K	100K	100K	100K	100K	100K	100K	100K	100K	110K	120K					
13							130	100	100H	100	[100]A	100	100	100	100	100	100	110	110					
14							110	110	100	100	100	100	100	100	100	100	100	110	110					
15							A	100	100	100	100	100	[100]A	100	100	100	100	110	110					
16							110	100	100	100	100	[100]A	(100)A	A	A	A	(100)A	110	(100)A					
17							S	100	100	(100)A	100	100	100	100	100	100	100	100	A					
18							S	100	100	100	100	100	100	100	100	100	100	120	120					
19							S	110	M	M	100	100	100	100	100	100	100	100	A					
20							(100)S	100	100	100	100	100	100	100	(100)A	100	100	100	100					
21							A	A	100	100	100	100	100	100	100	100	100	100	S					
22							A	100	100	100	100	100	100	110	100	100	100	100	A					
23							A	100	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	SK					
24							SK	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	100KN	110K					
25							(110)SK	110K	100K	100KH	100K	100K	100K	100K	100K	100K	100K	110K	100K					
26							S	110	100	100	100	100	100	100	100	100	100	100	(110)S					
27							SK	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	SK					
28							AK	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	(120)SK					
29							(110)SK	100KH	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	SK					
30							QK	110K	110K	100K	100K	100K	100K	110K	110K	100K	100K	100K	SK					
31							CK	CK	100K	100K	100K	100KN	100K	100K	100K	100K	100K	100K	AK					
Median							110	100	100	100	100	100	100	100	100	100	100	100	110					
Count							12	27	29	29	29	29	30	30	30	30	31	31	19					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 70

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), August (Month), 1953

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., J.P.W., E.J.W.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	A	A	3.2	B	B	B	A	2.5	(2.2)^{B}					
2							A	2.3	2.5	(2.7)^{A}	[2.9]^{A}	3.1	[3.2]^{A}	3.2	3.2	3.1	3.0	2.4	A					
3							A	A	2.6	A	A	A	A	A	(3.2)^{D}	3.1	2.9	2.6	2.3					
4							(1.9)^{D}	2.2	2.5	[2.8]^{A}	(3.2)^{A}	(3.2)^{D}	(3.3)^{D}	(3.3)^{D}	(3.1)^{A}	3.0	2.8	2.3	A					
5							A	A	2.5	A	A	A	A	A	A	3.2	(2.9)^{A}	2.6	2.2					
6							A	A	A	A	A	A	A	A	A	3.2^{H}	2.9	2.5	A					
7							1.7	2.3	2.7	A	A	(3.2)^{A}	3.3	(3.3)^{D}	(3.2)^{D}	3.1^{H}	[2.8]^{A}	2.5	2.2^{H}					
8							(1.8)^{H}	(2.4)^{A}	(2.5)^{A}	A	A	(3.3)^{A}	3.4	3.3	3.2	3.1	2.8	A	S					
9							A	(2.3)^{H}	2.5	A	A	A	A	(3.1)^{D}	3.2	3.1	2.9	2.5	A					
10							A	C	(2.5)^{A}	A	A	A	3.3	3.3	3.2	3.0	2.8	2.5	A					
11							1.7	[2.2]^{A}	2.9	A	A	A	A	A	A	A	3.0	2.7	(2.1)^{A}					
12							1.9^{K}	A^{K}	A^{K}	3.0^{K}	3.1^{K}	(3.2)$^{D}_{K}$	3.2^{K}	3.2^{K}	3.2^{K}	3.0^{K}	2.8^{K}	2.5^{K}	2.0^{K}					
13							(2.0)^{A}	2.3	(2.6)^{A}	(2.7)^{A}	[2.8]^{A}	(2.9)^{D}	3.1	[3.2]^{A}	3.3	3.2	2.9	A	A					
14							A	(2.4)^{A}	2.7	(2.9)^{A}	[3.0]^{A}	(3.1)^{D}	A	A	A	A	2.9	2.5	A					
15							A	2.4	2.7	3.0	A	A	A	A	3.2	3.1	2.9	2.5	A					
16							1.7	2.3	2.7	2.8	3.0	[3.2]^{A}	(3.3)^{A}	A	A	A	2.8	2.5	A					
17							S	2.4	A	A	A	A	A	A	3.3	(3.1)^{A}	2.8	2.5	A					
18							A	2.3	2.3	3.1	A	A	A	A	A	A	A	2.6	A					
19							A	(2.2)^{D}	M	M	3.1	3.2	3.3	3.3	3.2	3.1	2.8	A	A					
20							1.8	2.3	2.8	A	A	3.3	(3.3)^{D}	[3.2]^{A}	3.2	3.0	2.8	2.6	A					
21							A	A	A	(3.1)^{A}	A	A	3.3	[3.3]^{A}	3.2	3.0	2.8	2.4	S					
22							A	A	2.7	3.0	3.2	(3.3)^{D}	(3.2)^{A}	3.4	3.3	3.1	2.9	2.4	A					
23							A	(2.2)^{A}	(2.5)$^{A}_{K}$	A^{K}	A^{K}	3.2^{K}	3.3^{K}	3.2^{K}	3.1^{K}	3.0^{K}	[2.7]$^{B}_{K}$	2.4^{K}	S^{K}					
24							S^{K}	A^{K}	2.4^{K}	2.6^{K}	[2.8]$^{A}_{K}$	3.1^{K}	3.2^{K}	3.1^{K}	3.0^{K}	3.0^{K}	2.6^{K}	2.4$^{H}_{K}$	1.8^{K}					
25							1.7^{K}	2.1^{K}	2.4^{K}	2.7$^{H}_{K}$	(2.8)$^{D}_{K}$	3.1^{K}	(3.2)$^{A}_{K}$	[3.2]$^{A}_{K}$	3.1^{K}	2.9^{K}	2.7^{K}	2.3^{K}	A^{K}					
26							1.7	2.2	A	A	3.0	3.1	(3.2)^{F}	3.1	3.0	2.9	(2.6)^{A}	2.3	1.8					
27							A^{K}	2.2^{K}	2.4^{K}	(2.7)$^{D}_{K}$	3.0^{K}	3.2^{K}	3.2^{K}	(3.2)$^{B}_{K}$	(3.1)$^{D}_{K}$	2.8^{K}	2.6^{K}	2.4^{K}	1.7^{K}					
28							A^{K}	2.3^{K}	2.5^{K}	2.7^{K}	(3.0)$^{D}_{K}$	3.1^{K}	(3.1)$^{D}_{K}$	3.1^{K}	3.0^{K}	2.8^{K}	2.6^{K}	2.4^{K}	1.8^{K}					
29							1.8^{K}	2.2$^{H}_{K}$	2.4^{K}	2.8^{K}	3.0^{K}	3.1^{K}	3.2^{K}	3.2^{K}	3.1^{K}	2.9^{K}	2.5^{K}	2.2^{K}	1.7^{K}					
30							Q^{K}	(2.2)$^{D}_{K}$	2.5^{K}	2.9^{K}	3.0^{K}	(3.1)$^{D}_{K}$	[3.2]$^{B}_{K}$	(3.2)$^{D}_{K}$	(3.1)$^{D}_{K}$	3.0^{K}	2.7^{K}	2.3^{K}	A^{K}					
31							C^{K}	C^{K}	2.2^{K}	2.4^{K}	(2.8)$^{D}_{K}$	3.1$^{H}_{K}$	3.2^{K}	3.2^{K}	3.0^{K}	2.8^{K}	2.6^{K}	2.4^{K}	A^{K}					
Median							1.8	2.3	2.5	2.8	3.0	3.2	3.2	3.2	3.2	3.0	2.8	2.5	2.0					
Count							11	21	24	17	16	20	22	21	24	26	29	28	11					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 71

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc.Km (Unit) August (Month), 1953

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: McC., J.W.P., E.J.W.

Lat 38.7°N, Long. 77.1°W — 75° W Mean Time

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	8.0/100	7.2y/100	E	3.1/120	4.2/110 H	5.2/110	5.4/110	9.4/110	10.0/100 H	5.0/100	G	4.1/120	3.9/120	G	3.4y/110	G	G	6.7/110	4.0/120	3.5/110	E	E
2	E	10.5/110	E	4.4/100	E	7.0y/110	3.8/110 H	3.3y/120	3.7/110	6.6/100	4.6/100	3.8y/110	4.2/100	G	G	G	3.1/120	4.9/110	6.4/110	2.1/110	E	4.7/110	4.1/110	3.3/110
3	3.6y/100	2.0/100	2.8y/100	E	4.3/100	7.4y/100	2.2/100 H	3.5y/120	4.1/110	6.3/100	4.8/100	3.9/100	4.2y/100	4.0y/100	3.8y/110	3.6y/110	3.4y/110	G	2.3/110	3.6/110	5.4/110	4.4/110	E	3.8y/100
4	E	E	E	2.9/100	E	E	7.2/110	3.8/110	5.0/100	4.3/100	3.9y/100	G	G	G	4.8y/110	5.4/110	6.8/100	4.4/100	4.3/100 H	2.3y/100	1.9/110	4.9y/110	4.9/110	5.0y/100
5	5.4y/100	4.7/100	4.9/100 H	5.8/100	5.4/100	4.5/100	4.2/100	6.8/100	8.0/100	7.0/100 H	6.9/100	7.2/100	12.0/100	7.0/100	5.0/100	3.9/120	4.9/100	3.7/100 H	G	2.7y/120	3.0y/110	4.7/110	3.3/110	4.3/110
6	E	4.4/100	3.0/100	(2.3)5/100	3.8y/120	E	3.3/110	6.6/110	5.8/100	4.5/100	5.3/100	20.0/100	5.0/110	5.2/110	4.3y/110	3.3/120	4.6/120	4.7/110	4.8/110 H	3.6y/120	E	5.0/110	3.5/110	3.3/100
7	E	4.0y/100 H	E	3.2/110	4.0/110	4.2/110	3.0y/130	G	G	4.0/100	3.8/110	3.7y/110	G	G	3.1/120	3.3y/100	4.2/100	2.0/100	G	2.8y/120	2.5/110	4.4/110	4.1/110	E
8	E	E	2.4y/100	E	7.2y/100	E	3.1/140	3.3/120 H	3.7/110	4.1/110	4.2/110	3.5/120	G	7.0y/110	4.0/140	3.7/130	7.2/120	2.9/120	2.2/(120)5	E	4.9/120	3.0y/120	E	E
9	E	E	2.2y/120	E	7.5y/120	3.0/110	2.9/130	3.5y/120	3.7/130	4.1/110	4.7/100	5.3/100	4.2/100	G	G	G	G	4.9/120	7.2/110	3.3y/120	3.5/120	4.2/120	2.3y/110	2.8/110
10	2.7/110	2.7/100	4.6y/120	E	E	8.2y/110	3.1y/120	C	3.9y/120	3.9y/110	3.3/100	3.4/110	3.5y/100	4.7y/120	7.0/120	6.8/120	3.5/120	4.2/110 H	3.6/110	4.2/110	E	E	E	E
11	3.3y/110	3.5/110	E	E	2.3/100	2.2/110	1.9/100 H	3.5y/120	18.0y/120	4.1y/110	4.0y/110	7.6y/110	4.2/100	4.4y/100 H	3.9/100	4.6/100 H	G	G	6.6y/120	3.0/110	E	2.3y/100	2.3y/110	2.3y/120
12	2.4y/120	E	E	E	2.4y/150	1.7y/130	2.1y/110	2.3/110 H	3.5/110	3.5/110	3.9/110	7.6/100	G	G	G	G	3.4/110	G	3.6/120	2.2/130	2.5/130	E	E	E
13	E	E	E	E	3.7/100	E	2.0/130	2.7/120	3.1/110	4.8/100	9.9/100 H	3.6/110	5.0/110	4.8y/120	3.8/130	G	G	3.6/110	3.7/120	2.8/110	E	2.3/110	4.3/100	3.9/100
14	E	4.0/100	2.8/100	E	E	4.2/110	3.1y/110	8.4y/110	4.0/110	7.0y/110	4.1/100	4.2y/100	4.1y/110	4.2y/110	6.6y/110 H	3.8/110	6.6y/110	6.6y/120 H	2.4/110	3.7/110	5.8/100	2.3/100	2.4/110	2.8/100
15	4.7/100	4.1/100	4.0/100	E	8.4/100	4.4/100	3.6/100	G	G	7.2/110	4.9/100	5.2/100	8.6/100 H	4.2y/110	G	G	G	3.9/110	4.2/110	2.0/120	E	5.2/110	E	2.8/100
16	3.0/100	2.7/100	3.2/100	3.6/100	E	E	3.0y/120	4.2/110	4.5/110	4.8/100	5.2/100	6.2/100	4.0/100	5.4/100	4.5/100	5.2/100	3.3/100	3.5y/100	3.6/100	2.4/100	4.3y/110	E	E	E
17	E	E	E	E	E	E	2.1/140	G	6.4/100	8.0/100	6.8/100 H	6.4/100	6.8/100	4.2/100	G	4.0y/110	4.3/110	3.7/110	3.7/110	3.6y/110	4.6/110	3.7/110	5.0/110	9.0/110
18	7.8/100	4.1/100	4.6/110	6.4y/100	4.0/100	4.3/110	4.1y/110	3.2y/120	3.7/110	3.6/110	4.3/110	4.3/100	5.0/100	5.6/100	4.9/100	4.2/100	4.0/100	G	4.9/120	4.3/120	4.2/110	3.5y/120	5.6/110	2.4/100
19	E	E	E	E	E	3.0/120	2.7y/120	2.3/120	M	M	3.5/110	7.0y/120	G	7.0y/120	7.8/110	7.6/100	9.2/100	7.0/100	3.9/100	4.0/100	E	3.0y/100	5.5/100	4.6/100
20	4.7/100	5.1/100	5.0/100	4.4/100	4.1/100	2.7/100	G	3.0y/100	3.8/110	4.2/100	4.0/100	G	G	4.0/100	4.1/100	G	G	G	2.0/120	3.2/100	4.0/100	2.1/100	8.0/100	3.8/100
21	4.2/100	3.8/100	3.1/100	3.9/100 H	3.6/100	4.7/100	3.2/100	4.4/100 H	7.0y/110	4.0/100	4.3/100	4.0y/100	3.3/100	7.0/100	3.8/130	3.4/130	G	G	2.1/100	4.2/100	E	5.4/100 H	3.3y/100	3.0y/110
22	E	3.6y/100	2.5/100	3.0/100	2.7/100	2.5/100	2.7y/110	3.3/110	4.0/110	3.5/100 H	3.8/110	4.1/110	3.7/110	G	G	G	6.0/110	6.2/100	3.8/100	4.6/100	2.6y/100	E	5.8/100 H	3.1/100
23	3.7y/100	E	E	E	E	2.2y/110	3.7/110	4.8/110	4.3/100	3.7y/100	3.1/100	G	G	G	G	G	G	G	G	E	2.4/110	E	E	E
24	E	E	E	E	E	4.0y/100	1.9/120	3.1y/100	3.7/110	3.7y/100	3.6y/100	G	G	4.7/120	G	G	G	G	3.3/130	E	E	11.5y/120	E	E
25	E	E	E	E	E	E	G	G	G	6.6y/100	G	G	3.4/100	4.2/100	4.3y/120	5.0/110	G	6.2/110	5.0/100	3.2/100	E	E	E	E
26	E	E	E	E	E	E	G	G	7.0y/110	3.4y/100	G	G	G	G	G	G	3.5y/110	G	2.4/110	3.0y/110	E	E	E	E
27	E	E	E	E	E	E	1.8/130	G	G	11.5y/110 H	G	G	G	G	7.0/100	5.4/100	5.5/100	4.7/120	3.7/110	3.7/110	2.5/110	3.2/100	2.0/100	E
28	E	E	E	3.8y/130	E	4.2y/100	1.9/130 H	G	G	G	G	G	G	G	G	G	6.8y/110	G	2.9y/120	E	E	E	E	E
29	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	G	G	G	E	2.7y/110	E	E	E
30	E	E	E	E	E	E	G	G	18.0y/140	G	G	G	G	G	G	G	G	G	2.1/130	9.0y/100	7.6/100	E	3.4/110	E
31	E	E	E	E	E	C	C	C	G	G	G	G	G	G	8.2y/110	G	3.6/110 H	G	3.5/100	E	E	E	E	3.6/100
Median	**	**	**	**	**	2.6	2.8	3.2	3.8	4.1	4.0	3.8	3.3	4.1	3.8	3.3	3.4	2.9	3.6	3.0	2.5	3.0	2.3	2.4
Count	31	31	31	31	31	30	30	29	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31

** MEDIAN fEs LESS THAN foE, OR LESS THAN LOWER FREQUENCY LIMIT OF THE RECORDER.

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 72

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M1500)F2 , ____ August , 1953
(Characteristic) (Unit) (Month)

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: McC., J.W.P., E.J.W.

Lat 38.7°N, Long 77.1°W 75°W Mean Time

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.1)^{S}	2.1	(2.0)$^{J}_{S}$	A	E	2.2	2.2	A	2.2	(1.9)^{A}	A	2.1	2.1	G	G	2.1	1.8	1.9	2.1	2.2	2.1	2.1^{H}	(2.3)^{S}	1.9
2	2.0	2.0	(2.1)^{S}	2.0	(2.1)$^{J}_{S}$	(2.3)^{S}	2.3	G	1.8	A	1.9	1.7	1.9	2.0	2.0	1.9	2.1	2.2	2.3	2.3	2.4	2.0	2.0	2.1
3	2.2	2.0	2.1	2.2	2.2	2.3	2.3	G	1.9	2.1	2.1	2.1	2.0	1.9	2.1	2.0	2.0	2.1	2.0	2.2	2.0	1.9^{F}	(2.0)^{S}	(2.1)^{S}
4	2.2^{F}	2.1	2.0	(2.0)$^{J}_{S}$	(2.0)^{S}	2.2	2.3	2.1	2.3	2.1	2.4	2.2	1.7	2.2	2.0	2.2	2.3	2.3^{H}	2.2	2.2	2.3	2.1	A	(2.2)$^{P}_{A}$
5	2.1	2.0	1.9	A	A	A^{S}	2.4	A	2.1	2.3	A	A	A	A	2.0	2.0	1.9	2.1	2.0	2.2	2.3	(2.2)$^{J}_{S}$	2.0	2.0
6	2.1	(1.9)^{S}	(2.1)^{S}	(2.0)$^{P}_{S}$	(2.1)$^{J}_{S}$	2.0	2.2	G	A	1.9	1.9	2.1	2.1	1.9	1.9	1.9	2.1	1.9	2.0	2.3	2.0	2.0	2.1	2.2
7	2.1	2.0	2.2	2.0	2.0	2.1	2.2	2.4	2.1	2.3	2.2	1.8	2.3	1.9	1.9	2.1	1.9	2.0	2.1	(2.2)$^{P}_{S}$	2.2	(2.2)$^{J}_{S}$	2.2^{S}	(2.1)$^{J}_{F}$
8	(2.2)$^{J}_{S}$	2.3	2.2	(2.0)$^{J}_{F}$	1.8^{F}	2.2	2.4	2.3	2.3	2.3	2.2	2.1	1.9	2.1	2.1	2.0	2.1	2.3	2.2	2.2	2.3	2.1	2.1	2.0
9	2.1	2.0	2.1	2.1^{F}	2.1^{F}	2.1	2.1	1.9	G	1.7	(1.6)^{S}	1.8	2.0	1.8	1.9^{S}	1.9	1.9	2.1	2.0	2.3	2.0	2.0	2.0	1.9
10	2.0	2.0	2.0	1.9	(1.9)$^{J}_{S}$	(1.9)$^{J}_{S}$	2.3	C	(1.8)$^{P}_{S}$	(1.8)$^{P}_{S}$	(2.1)^{S}	G	1.8	1.8	1.8	1.9	2.1	2.0	2.1	2.0	2.0	2.0	2.1	1.9
11	2.0	2.0	2.1	2.0	2.1	1.8	2.5	G	G	G	1.8	1.6	G	(1.8)$^{P}_{S}$	(2.0)$^{P}_{H}$	2.0	1.9$^{H}_{E}$	2.0	2.0	2.0	(2.1)$^{J}_{S}$	2.0	2.0^{S}	(1.9)^{F}
12	(1.9)$^{P}_{F}$	(1.9)$^{P}_{F}$	F	F	S^{F}	2.2^{F}	2.4^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	2.0^{K}	2.0^{K}	1.9^{K}	^{K}(2.0)$^{J}_{S}$	2.0^{K}	1.9^{K}	1.9
13	2.0	1.9	1.9	E	E	1.9	2.3	G	G	G	G	1.4	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.2	(2.1)$^{J}_{S}$	2.1	1.9^{F}
14	(1.9)^{F}	(2.0)$^{J}_{F}$	2.2^{F}	(2.0)$^{S}_{F}$	F	(2.0)$^{J}_{S}$	2.3	G	1.8	2.1	G	1.7	1.7	1.9	2.1	2.0	2.1	2.1	2.3	2.2	2.1	(2.1)$^{J}_{S}$	(2.2)$^{J}_{S}$	(2.0)$^{S}_{F}$
15	(2.0)$^{S}_{F}$	2.1	2.1^{F}	(2.2)^{F}	F	F^{S}	2.5	2.4	(2.3)$^{F}_{H}$	2.1	2.3	2.0	2.1	2.0	2.1	2.0	2.0	2.1	2.1	2.0	2.0	2.1^{F}	1.9	2.2
16	1.9$^{F}_{S}$	2.0^{F}	2.0^{F}	2.2	2.1	2.2	2.5	G	1.8	2.0	1.6	2.1	2.0	1.8	2.0	1.9	2.0	2.0	2.1	2.2	2.1	2.0	2.0	(2.1)$^{J}_{S}$
17	2.1	(2.0)$^{J}_{S}$	2.1	(2.0)$^{J}_{S}$	2.0	(2.2)$^{J}_{S}$	2.4	2.2	2.4	2.3	2.3	1.9	2.1	2.1	2.2	2.0	2.2	2.2	2.3	2.3	2.2	2.2$^{S}_{F}$	(2.2)$^{S}_{F}$	A
18	A	2.0	2.2^{F}	2.2^{F}	2.4	(2.3)$^{F}_{S}$	2.4^{F}	2.2	2.4	2.4	2.0	1.8	G	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.0	2.0^{F}	2.1	(2.1)^{S}
19	2.0	1.9	2.0	2.1	2.0	(2.1)$^{J}_{S}$	2.3	2.2	M	M	2.1	1.7	2.2	2.2	A	2.1	(2.3)^{A}	A	2.2	2.0	2.3	(2.3)^{S}	2.1	A
20	A	A	(1.9)$^{A}_{F}$	A^{S}	F	(2.0)$^{J}_{S}$	2.0	2.5	2.5	2.4	2.4	2.2	2.2	1.8	2.2	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.0^{F}
21	2.0	(2.0)$^{J}_{S}$	2.0^{F}	(2.1)$^{J}_{F}$	2.1^{F}	2.4^{F}	2.4	2.4	2.3	2.2	2.2	2.1	2.2	2.0	2.0	2.0	2.2	2.3	2.3	2.3	2.3	(2.2)$^{J}_{S}$	(2.2)$^{J}_{S}$	2.2
22	2.0	2.0	2.1	2.2	2.2	2.3^{F}	2.4	(2.4)^{H}	2.3	2.4	2.2	2.2	2.0	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	(2.0)$^{J}_{S}$
23	2.0	2.2^{F}	2.1	2.1	2.2	(2.2)^{S}	2.4	2.2	2.2^{K}	2.0^{K}	2.2^{K}	2.2^{K}	2.0^{K}	1.8^{K}	1.7^{K}	2.0^{K}	1.9^{K}	1.9^{K}	1.9^{K}	2.2^{K}	1.9^{K}	2.1^{K}	1.9^{K}	1.8^{K}
24	^{K}(1.7)$^{J}_{S}$	2.0^{K}	1.9$^{F}_{K}$	(1.8)$^{S}_{K}$	E^{K}	^{K}(1.8)$^{J}_{S}$	2.3^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	1.6^{K}	1.6^{K}	1.8^{K}	1.7^{K}	2.0^{K}	2.1^{K}	2.2^{K}	1.9^{K}	^{K}(2.0)$^{J}_{S}$	1.9^{K}
25	1.9^{K}	1.9^{K}	^{K}(1.8)$^{J}_{S}$	^{K}(1.9)$^{J}_{S}$	^{K}(1.7)$^{J}_{S}$	F^{K}	2.1^{K}	G^{K}	G^{K}	1.7^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	^{K}(1.6)$^{J}_{S}$	1.6^{K}	A^{K}	A^{K}	2.0^{K}	2.0^{K}	2.0	2.0	1.9
26	2.0	1.9	2.0	(2.0)$^{J}_{S}$	(1.8)$^{J}_{S}$	E	2.4	G	2.0	2.0	2.0	1.8	2.1	2.0	1.8	2.2	1.9^{H}	2.0	2.0	(2.1)^{S}	2.1	2.4	1.9	1.9
27	1.9	2.0	2.1	1.9	^{K}(2.1)$^{J}_{S}$	E^{K}	2.1^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	1.8^{K}	1.9^{K}	1.9^{K}	2.1^{K}	2.3^{K}	2.1^{K}	2.0^{K}	2.0^{K}	2.0^{K}
28	(1.9)$^{F}_{K}$	(2.2)$^{F}_{K}$	(2.2)$^{F}_{K}$	^{K}(1.8)$^{J}_{F}$	^{K}(2.0)$^{J}_{S}$	^{K}(1.7)$^{J}_{S}$	2.3^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	1.9^{K}	G^{K}	1.8^{K}	2.0^{K}	2.2^{K}	2.2^{K}	2.3^{K}	2.2^{K}	2.3^{K}	^{K}(1.9)$^{J}_{S}$
29	^{K}(2.0)$^{J}_{S}$	2.0^{K}	^{K}(1.9)$^{J}_{S}$	^{K}(1.9)$^{J}_{S}$	(2.0)$^{S}_{K}$	E^{K}	2.2^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	1.7^{K}	1.9^{K}	2.0^{K}	2.0^{K}	2.1^{K}	2.3^{K}	1.7^{K}	^{K}(2.2)$^{J}_{S}$
30	2.0^{K}	E^{K}	E^{K}	E^{K}	E^{K}	E^{K}	2.3^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	(1.6)$^{S}_{K}$	2.0^{K}	2.0^{K}	2.0^{K}	2.0^{K}	^{K}(2.2)$^{F}_{S}$	(2.0)$^{J}_{A}$	1.9^{K}
31	2.0^{K}	E^{K}	E^{K}	E^{K}	E^{K}	C^{K}	C^{K}	C^{K}	G^{K}	G^{K}	G^{K}	G^{K}	1.7^{K}	G^{K}	G^{K}	G^{K}	1.8^{K}	1.9^{K}	2.0^{K}	2.1^{K}	2.2^{K}	2.1^{K}	2.1^{K}	(2.2)$^{S}_{K}$
Median	2.0	2.0	2.1	2.0	2.1	2.2	2.3	G	1.8	2.0	1.9	1.8	1.9	1.8	1.9	2.0	1.9	2.0	2.1	2.2	2.1	2.1	2.0	2.0
Count	29	28	28	24	21	23	30	27	29	29	29	30	30	30	30	31	31	29	30	31	31	31	29	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 73

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F2, ____, August, 1953
(Characteristic) (Unit) (Month)

Observed at Washington, D. C.

Lat. 38.7°N, Long. 77.1° W 75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C., J.W.P., E. J. W.

Calculated by: Mc C., E. J. W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(3.1)^{S}	3.1	(3.0)$^{J}_{S}$	A	E	3.2	3.2	A	3.2	(2.9)^{A}	A	3.1	3.1	G	G	3.1	2.7	2.8	3.1	3.2	3.1	3.1^{N}	(3.3)^{S}	2.9
2	3.0	3.0	(3.1)^{S}	3.0	(3.1)$^{J}_{S}$	(3.3)^{S}	3.3	G	2.7	A	2.9	2.5	2.9	3.0	3.0	2.8	3.1	3.2	3.3	3.4	3.4	3.0	3.0	3.1
3	3.2	3.0	3.1	3.2	3.2	3.3	3.3	G	2.8	3.1	3.1	3.1	2.9	2.8	3.2	3.0	3.0	3.1	3.0	3.2	3.0	2.9^{F}	(3.0)^{S}	(3.1)^{S}
4	3.2^{F}	3.1	3.0	(3.0)$^{J}_{S}$	(3.0)^{S}	3.2	3.3	3.1	3.3	3.1	3.4	3.2	2.6	3.2	3.0	3.2	3.3	3.3^{H}	3.2	3.2	3.3	3.1	A	(3.2)$^{P}_{A}$
5	3.1	3.0	2.9	A	A	A^{S}	3.4	A	3.1	3.3	A	A	A	A	3.0	3.0	2.9	3.1	3.0	3.2	3.3	(3.2)$^{J}_{S}$	3.0	3.0
6	3.1	(2.9)^{S}	(3.1)^{S}	(3.0)$^{P}_{S}$	(3.1)$^{J}_{S}$	3.0	3.2	G	A	2.6	2.9	3.1	3.1	2.9	2.9	2.9	3.1	2.8	3.0	3.3	3.0	3.0	3.1	3.2
7	3.1	3.0	3.2	3.0	3.0	3.1	3.2	3.5	3.1	3.4	3.2	2.7	3.4	2.8	2.8	3.1	2.9	3.0	3.1	(3.2)$^{P}_{S}$	3.2	(3.2)$^{J}_{S}$	3.2^{S}	(3.1)$^{J}_{F}$
8	(3.2)$^{J}_{S}$	3.3	3.2	(3.0)$^{J}_{F}$	2.8^{F}	3.2	3.4	3.4	3.4	3.4	3.2	3.1	2.9	3.1	3.1	3.0	3.1	3.4	3.3	3.3	3.3	3.1	3.1	3.0
9	3.1	3.0	3.1	3.2^{F}	3.1^{F}	3.1	3.2	2.8	G	2.5	(2.4)^{S}	2.8	3.0	2.7	2.8^{S}	2.8	2.9	3.1	3.0	3.3	3.0	3.0	3.0	[illegible]
10	3.0	3.0	3.0	2.8	(2.8)$^{J}_{S}$	(2.9)$^{J}_{S}$	3.4	C	(2.7)$^{S}_{F}$	(2.7)$^{P}_{S}$	(3.1)^{S}	G	2.7	2.8	2.8	2.8	3.1	3.0	3.1	3.0	2.9	C	[illegible]	[illegible]
11	3.0	3.0	[illegible]	3.0	3.1	2.8	3.5	G	G	G	[illegible]	2.5	C	(2.7)$^{P}_{S}$	(3.0)$^{P}_{H}$	C	2.8$^{H}_{F}$	3.0	[illegible]	[illegible]	[illegible]	C	[illegible]	[illegible]
12	[illegible]	(2.7)$^{P}_{F}$	C	[illegible]	[illegible]	3.2^{F}	3.4^{K}	[illegible]	G^{K}	G^{K}	C	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	2.9^{K}	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.9	3.3	[illegible]	G	[illegible]	[illegible]	2.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.1)$^{F}_{H}$	3.1	[illegible]	[illegible]	[illegible]	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Median	3.0	3.0	3.1	3.0	3.1	3.2	3.3	G	2.7	3.0	2.9	2.7	2.9	2.8	2.9	3.0	2.9	3.0	3.1	3.2	3.1	3.1	3.0	3.0
Count	29	28	28	24	21	23	30	27	29	29	29	30	30	30	30	31	31	29	30	31	31	31	29	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 74

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form accepted June 1946

IONOSPHERIC DATA

(M3000)F1 (Characteristic) , ____ (Unit) August (Month) , 1953

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W 75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C., J.W.P., E. J. W.

Calculated by: Mc C., E. J. W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							3.6	A	A	A	A	4.2	3.8	4.1	4.0	B	3.6	3.8	3.5					
2							Q	3.5	3.8	A	3.9	3.8	4.1	3.9	4.1	3.9	3.7	3.6	3.7					
3							Q	3.8	3.7	A	4.0	4.1	3.9	3.9 H	(3.9) H	3.8	3.6 H	3.8	3.7					
4							Q	3.5	3.7	3.8	3.8	4.0	4.1	3.9	4.1	4.0	A	A	4.0					
5							Q	A	A	A	A	A	A	A	4.0	3.7	3.7	3.5	3.6					
6							Q	A	A	3.8	A	4.2	4.2	4.1	4.0	4.1	3.8	3.9	3.7					
7							Q	3.7	3.8	3.9	4.0	4.1	4.3	3.9 H	3.9 H	3.8	3.7	3.6	(3.7) P					
8							Q	3.8	3.7	3.8 H	4.0 H	3.9	3.9 H	3.8 H	3.9	3.9	3.8 H	3.8	(3.7) P					
9							(3.4) L	3.8	4.1	3.9	3.4	3.8	3.9	4.1	4.0	3.8 H	3.6 H	A	L					
10							Q	C	3.7	3.9 H	3.9 H	4.0 H	3.9 H	3.7	3.8	3.9	3.6	3.6	3.6					
11							L	3.5	3.7	3.8	3.8	4.0	3.9	4.1	3.7	3.9	3.7 F	3.6 F	(3.8) L					
12							Q K	3.7 K	3.7 K	3.9 H K	3.7 K	4.0 K	3.8 H K	3.8 K	3.7 K	3.8 K	3.7 K	3.3 K	3.4 K					
13							Q	3.5	3.7 H	3.9	4.2	4.0	A	3.9	3.6	3.7 H	3.5	3.6	L					
14							Q	3.5 E	3.6	3.8	3.9	4.0	4.0	3.9	3.8 H	3.7	3.5	3.7	L					
15							Q	L	3.8	3.8	4.1	3.7	3.8	3.9	4.0	4.1	3.5 H	3.7	L					
16							L	3.5	(3.6) S	(3.8) A	3.7	A	4.0	A	3.7	3.7	3.7	3.5	L					
17							Q	L	3.6	3.8	3.9	3.7	3.8	4.1	(3.9) S	3.8	3.6 H	(3.7) L	L					
18							Q	L	3.9	3.9 H	4.2	3.9	3.9	3.6	A	3.8	3.6	3.5	A					
19							Q	(3.6) L	M	M	4.3	4.2 H	4.0	3.9	A	A	A	A	L					
20							L	L	4.0	3.8	3.9 H	4.1	4.1	3.8	3.8	3.8 H	3.7	3.8 H	.29					
21							L	L	3.8	3.9	4.0	3.8	4.0	3.9	3.8	3.8	3.8	3.8	L					
22							Q	4.0	3.9	4.2	4.1	4.2	4.0	4.0	3.7 H	3.8	A	L	L					
23							4.1	3.6	A K	3.7 K	3.9 H K	4.0 K	3.7 K	3.7 K	3.7 K	3.8 K	3.7 K	3.6 K	3.4 K					
24							Q K	3.5 K	3.7 K	4.0 K	3.8 K	3.8 K	3.8 K	A K	3.7 K	3.7 K	3.6 K	3.6 K	3.5 K					
25							Q K	3.8 K	3.8 K	4.2 K	3.9 K	4.1 K	4.0 K	3.8 H K	3.7 K	3.8 K	3.6 K	A K	A K					
26							L	3.5	3.6	3.7	3.8 H	4.0	3.8	3.7	3.9	3.8	3.9	3.5	3.5					
27							L K	3.7 K	3.7 K	4.0 K	3.9 K	3.8 K	3.7 K	3.8 K	3.8 K	3.8 K	3.7 K	A K	L K					
28							Q K	3.5 K	3.7 K	3.9 K	3.8 K	4.0 K	3.9 K	3.7 K	3.8 K	3.9 K	3.7 K	3.4 K	L K					
29							L K	3.6 11 K	3.9 K	3.8 K	4.0 K	4.2 K	4.1 K	3.9 K	3.9 K	3.7 K	3.6 K	(3.5) L K	L K					
30							Q K	3.6 K	3.8 K	3.8 K	4.0 K	3.9 K	4.0 K	3.8 K	3.7 H K	4.0 H K	3.7 K	3.5 K	Q K					
31							C K	C K	3.6 K	3.6 K	3.7 K	4.0 K	4.0 K	4.0 K	3.8 K	3.8 K	4.0 H K	3.6 K	L K					
Median							—	3.6	3.7	3.8	3.9	4.0	3.9	3.9	3.8	3.8	3.7	3.6	3.6					
Count							3	21	26	26	28	29	29	28	29	29	28	25	15					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 75

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M1500)E (Characteristic), ____ (Unit), August (Month), 1953

Observed at Washington, D.C.

Lat. 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C., E.J.W., J.W.P.

Calculated by: Mc C., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	A	A	4.3	B	B	B	A	4.3	(4.1)^{B}					
2							A	4.1	4.3	(4.3)^{A}	A	4.3	A	4.2	4.3	4.3	4.3	4.3	A					
3							A	A	4.4	A	A	A	A	A	(4.4)^{A}	4.2	4.3	4.3	4.3					
4							(4.0)^{D}	4.3	4.3	A	(4.2)^{A}	(4.3)^{D}	(4.2)^{B}	(4.4)^{D}	(4.3)^{A}	4.4	4.3	---	A					
5							A	A	4.4	A	4	A	A	A	A	4.3	A	4.3	4.2					
6							A	A	A	A	A	A	A	A	A	4.3^{H}	4.1	4.3	A					
7							4.4	4.3	4.3	A	A	(4.3)^{A}	4.0	(4.1)^{D}	(4.2)^{D}	4.2^{H}	A	4.4	4.2^{H}					
8							(4.2)^{H}	(4.3)^{A}	(4.5)^{A}	A	A	(4.2)^{A}	4.3	4.4	4.3	4.4	3.9	A	5					
9							A	(4.4)^{H}	4.5	A	A	A	A	(4.4)^{D}	4.0	4.1	4.3	4.3	A					
10							A	C	(4.5)^{A}	A	A	A	4.4	4.3	4.3	4.3	4.4	4.2	A					
11							4.4	A	4.3	A	A	A	A	A	A	A	4.3	4.3	(4.4)^{A}					
12							4.4^{K}	A^{K}	A^{K}	4.3^{K}	4.3^{K}	(4.3)$^{D}_{K}$	4.3^{K}	4.3^{K}	4.3^{K}	4.2^{K}	4.1^{K}	4.1^{K}	4.2^{K}					
13							(4.0)^{A}	4.1	(4.5)^{A}	(4.5)^{A}	A	(4.5)^{D}	4.5	A	4.2	4.3	4.2	A	A					
14							A	(4.2)^{A}	4.3	(4.3)^{A}	A	(4.4)^{D}	A	A	A	A	4.3	4.3	A					
15							A	4.1	4.3	4.4	A	A	A	A	4.1	4.3	4.2	4.4	A					
16							4.3	4.3	4.4	4.4	4.5	A	(4.1)^{A}	A	A	A	4.3	4.2	A					
17							5	4.0	A	A	A	A	A	A	4.1	(4.4)^{A}	4.3	4.3	A					
18							A	4.2	4.5	4.4	A	A	A	A	A	A	A	4.3	A					
19							A	(4.4)^{D}	4	4	4.3	4.3	4.3	4.3	4.4	4.3	4.4	A	A					
20							4.4	4.4	4.4	A	A	4.1	(4.2)^{D}	A	4.2	4.3	4.3	4.3	A					
21							A	A	A	4.3	A	A	4.4	A	4.4	4.3	4.3	4.3	5					
22							A	A	4.3	4.2	4.3	(4.3)^{F}	(4.4)^{A}	4.4	4.3	4.3	4.4	4.3	A					
23							A	(4.3)^{A}	(4.4)$^{A}_{K}$	A^{K}	A^{K}	4.4^{K}	4.3^{K}	4.3^{K}	4.3^{K}	4.3^{K}	E^{K}	4.3^{K}	5^{K}					
24							5^{K}	A^{K}	4.4^{K}	3.9^{K}	A^{K}	4.3^{K}	4.3^{K}	4.3^{K}	4.2^{K}	4.2^{K}	4.3^{K}	4.1$^{H}_{K}$	4.2^{K}					
25							4.1^{K}	4.4^{K}	4.3^{K}	4.5$^{H}_{K}$	(4.3)$^{D}_{K}$	4.4^{K}	(4.3)$^{A}_{K}$	A^{K}	4.3^{K}	4.3^{K}	4.3^{K}	4.3^{K}	4^{K}					
26							4.3	4.2	A	A	4.0	4.3	(4.2)^{D}	4.3	4.1	4.3	(4.4)^{A}	4.1	4.3					
27							A^{K}	4.4^{K}	4.4^{K}	(4.2)$^{D}_{K}$	4.1^{K}	4.1^{K}	4.1^{K}	(4.3)$^{B}_{K}$	(4.3)$^{A}_{K}$	4.3^{K}	4.4^{K}	4.4^{K}	4.3^{K}					
28							A^{K}	4.0^{K}	4.3^{K}	4.3^{K}	(4.3)$^{D}_{K}$	4.2^{K}	(4.3)$^{D}_{K}$	4.3^{K}	4.4^{K}	4.3^{K}	4.3^{K}	4.4^{K}	4.4^{K}					
29							4.4^{K}	4.3$^{H}_{K}$	4.4^{K}	4.3^{K}	4.4^{K}	4.3^{K}	4.3^{K}	4.2^{K}	4.4^{K}	4.0^{K}	4.3^{K}	4.3^{K}	4.3^{K}					
30							Q^{K}	(4.2)$^{F}_{K}$	4.1^{K}	4.2^{K}	4.2^{K}	(4.0)$^{D}_{K}$	B^{K}	(4.2)$^{D}_{K}$	(4.4)$^{F}_{K}$	4.1^{K}	4.3^{K}	4.3^{K}	A^{K}					
31							C^{K}	C^{K}	4.0^{K}	4.2^{K}	4.3^{K}	4.2$^{H}_{K}$	4.3^{K}	4.2^{K}	4.3^{K}	4.3^{K}	4.4^{K}	4.1^{K}	A^{K}					
Median							4.3	4.3	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3					
Count							11	20	24	16	12	19	20	17	14	26	26	23	11					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 76

Ionospheric Storminess at Washington, D. C.

August 1953

Day	Ionosphere character* 00-12 GCT	12-24 GCT	Principal storms Beginning GCT	End GCT	Geomagnetic character** 00-12 GCT	12-24 GCT
1	1	2			3	3
2	3	1			3	2
3	2	2			2	2
4	1	2			3	3
5	2	2			3	2
6	2	2			1	2
7	1	1			3	2
8	0	2			3	2
9	1	2			3	3
10	2	2			4	3
11	1	3			4	3
12	2	5	1100	----	5	3
13	2	3	----	0400	3	4
14	1	1			3	3
15	2	3			2	2
16	1	2			3	3
17	0	3			1	1
18	1	1			2	2
19	1	1			2	1
20	1	1			1	1
21	2	2			1	1
22	1	3			2	1
23	1	4	1300	----	4	4
24	4	5	----	----	5	5
25	4	5	----	----	5	3
26	2	2	----	0200	4	4
27	2	5	0900	----	5	4
28	4	5	----	----	5	4
29	4	5	----	----	5	4
30	6	5	----	----	5	4
31	6	5	----	----	4	4

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 77a

Radio Propagation Quality Figures
(Including Comparisons with Short-Term and Advance Forecasts)

July 1953

Day	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day quality index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Ch}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half day (1)	Half day (2)
1	6	(4)	6	6	(4)	(4)	(4)	5	5	(4)	(4)	X	(5)	(4)
2	6	(4)	6	6	5	(4)	5	6	5	5	5		(4)	(4)
3	6	5	6	6	5	(4)	5	6	6	6	6		3	3
4	6	(4)	6	6	6	5	6	6	6	5	6		3	3
5	6	(4)	7	7	6	5	6	6	6	7	7		3	2
6	6	5	7	7	6	5	6	7	6	7	7		3	2
7	7	6	7	7	6	5	6	6	7	7	7		3	3
8	6	5	6	6	6	5	6	7	6	6	6		3	3
9	6	7	6	7	6	6	7	7	6	6	6		2	3
10	7	6	7	7	6	7	7	7	7	6	6		3	1
11	7	6	7	7	7	7	7	7	7	6	7		2	1
12	7	7	7	7	7	7	7	7	7	6	7		1	3
13	7	6	6	6	6	6	6	7	7	6	7		(4)	3
14	7	6	7	7	6	6	7	7	7	7	7		2	(4)
15	7	5	7	7	7	6	6	7	7	7	7		(4)	3
16	7	7	7	7	6	5	7	7	7	7	7		2	1
17	7	7	7	7	7	7	7	7	7	7	7		2	1
18	7	6	7	7	7	6	7	7	7	7	7		2	1
19	7	7	7	7	7	7	7	7	7	7	7		2	2
20	7	7	7	7	7	7	7	7	7	7	7		3	2
21	7	7	7	7	7	7	7	7	7	7	7		2	1
22	7	6	7	7	7	7	7	7	7	7	7		1	2
23	6	(4)	6	5	7	5	6	6	5	7	7		(4)	(4)
24	(4)	5	6	7	(4)	(3)	7	6	6	7	7		3	3
25	7	6	7	7	6	6	6	6	7	6	7		2	3
26	6	5	6	6	6	(4)	6	5	6	5	5		(4)	3
27	5	(3)	6	5	5	(3)	5	(4)	(4)	(4)	(4)	X	(5)	3
28	(4)	(3)	5	6	(4)	(3)	5	6	(4)	(4)	(4)	X	(5)	3
29	(4)	(4)	5	6	(4)	(4)	5	5	(4)	(4)	(4)	X	(4)	(4)
30	(4)	(3)	5	6	(4)	(4)	5	5	(4)	5	5		(4)	(4)
31	(4)	5	5	6	(4)	(4)	5	5	5	5	6		(4)	3

Score:

Quiet periods	P	16	11	20	18	15	19	
	S	9	9	10	13	11	7	
	U	0	2	0	0	1	1	
	F	1	0	1	0	0	0	
Disturbed periods	P	5	5	0	0	3	3	
	S	0	4	0	0	1	1	
	U	0	0	0	0	0	0	
	F	0	0	0	0	0	0	

Scales:
Q-scale of Radio Propagation Quality
(1) - useless
(2) - very poor
(3) - poor
(4) - poor to fair
5 - fair
6 - fair to good
7 - good
8 - very good
9 - excellent

K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in () for emphasis

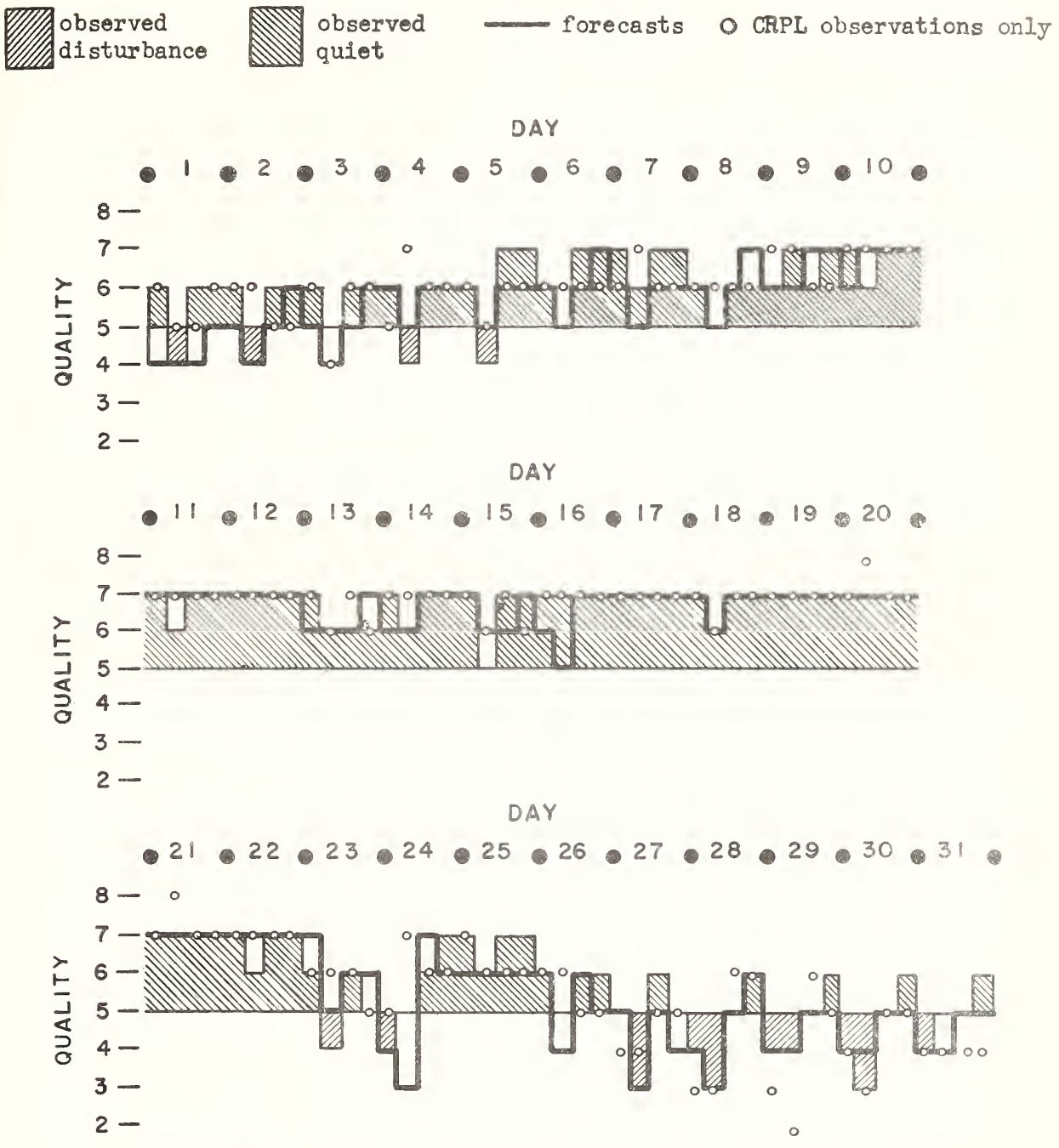
Scoring: (beginning October 1952)
P - Perfect: forecast quality equal to observed
S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were ≥ 5, or both ≤ 5
F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

Table 77b

Short-Term Forecasts--July 1953



Outcome of Advance Forecasts (1 to 4 days ahead)--July 1953

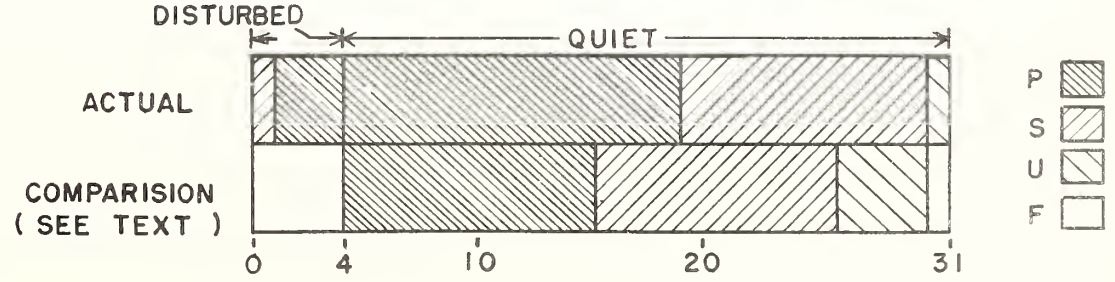


Table 78a

Coronal observations at Climax, Colorado (5303A), east limb

Date GCT	Degrees north of the solar equator																			0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																						
Aug 3.6	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3	3	3	3	4	4	5	5	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.8a	X	X	X	X	X	X	X	2	2	2	2	2	2	2	3	4	5	6	4	3	4	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7a	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	3	5	5	5	3	3	4	5	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
6.7a	-	-	-	-	-	-	-	-	3	3	3	3	3	3	4	4	6	6	7	4	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	1	2	4	6	6	5	4	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	X	X	X	-	-	-	-	-	-	-	-	-	-	2	4	5	5	4	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.0a	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	6	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	1	1	1	1	1	2	2	2	6	4	3	6	3	2	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
12.8	-	-	-	-	-	-	-	2	3	2	2	2	2	2	1	1	3	3	3	4	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7a	-	-	-	-	-	-	-	1	2	2	2	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	2	2	2	-	-	-	-	-	-	-	-
16.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
20.7a	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7a	-	-	-	-	-	-	-	-	-	-	4	3	4	4	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7a	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	2	2	2	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
28.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
30.0	-	-	-	-	-	-	-	-	-	-	-	-	1	2	4	4	5	5	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	1	1	1	1	2	3	2	1	1	1	1	4	4	4	4	4	4	3	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	1	2	2	1	3	2	2	3	3	4	2	2	3	3	3	5	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 79a

Coronal observations at Climax, Colorado (6374A), east limb

Date GCT	Degrees north of the solar equator																			0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																						
Aug 3.6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	4	5	5	5	4	4	4	4	4	3	3	1	1	1	1	1	1	1	1	2	2	
4.8a	X	X	X	X	X	X	X	2	2	2	2	2	1	1	1	1	4	4	4	3	3	6	4	4	3	3	3	3	2	2	2	2	2	2	2	2	3	
5.7a	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	4	5	3	5	4	4	4	4	4	4	2	2	2	2	2	2	2	2	2
6.7a	2	2	2	2	2	2	2	2	1	1	1	1	1	2	2	3	4	4	4	4	4	3	3	2	2	2	1	1	1	1	1	2	2	2	2	2	2	2
7.7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	6	4	2	2	4	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8.7	X	X	X	-	-	-	-	-	-	-	-	-	2	2	2	4	4	3	2	3	3	2	2	2	2	3	1	1	1	1	1	1	1	1	1	1	1	1
11.0a	X	X	2	2	2	1	1	1	1	1	1	1	1	1	3	3	3	6	6	4	8	7	5	2	2	2	2	2	1	1	1	1	3	3	3	3	3	
11.7a	3	2	1	1	1	1	1	1	1	1	2	2	2	2	3	4	5	5	3	8	5	2	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	
12.8	2	2	2	2	2	2	1	1	1	2	2	3	3	2	2	3	3	3	3	3	6	5	5	4	4	5	4	5	1	1	2	2	2	2	3	3	3	
13.7a	3	1	1	1	1	1	1	1	1	1	1	1	3	2	2	2	2	2	2	2	3	5	4	3	2	2	2	2	1	1	1	1	1	1	1	1	2	
16.0a	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
16.7	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	3	4	5	5	4	4	4	5	4	3	2	1	1	1	1	1	1	1	1	1	1	
17.7	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	2	2	4	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
18.8	2	-	-	-	2	2	1	1	1	1	1	1	1	1	1	1	2	3	4	2	2	1	1	2	2	2	2	2	1	1	1	1	1	1	1	2		
19.7a	2	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	2	2	1	1	2	2	2	2	1	1	1	1	1	1	1	2	1	1	
20.7a	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
21.7a	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	2	2	2	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	
23.9a	-	-	-	-	-	-	-	-	-	3	4	3	3	-	-	-	-	-	-	-	3	4	4	4	3	3	-	-	-	-	-	-	-	-	-	-	-	
24.7a	-	-	-	-	-	-	-	-	-	-	3	3	3	3	4	3	3	3	4	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	3
25.7a	2	3	2	-	-	-	-	-	2	2	2	2	2	2	2	3	3	3	3	3	3	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
26.8a	X	-	-	-	-	-	-	-	-	-	-	-	1	5	2	3	3	2	2	2	2	2	2	-	-	-	-	-	X	X	X	X	X	X	X	X	X	
28.7a	X	-	-	-	-	-	-	-	-	-	-	-	3	3	2	4	5	2	2	2	2	3	2	-	-	-	-	-	X	X	X	X	X	X	X	X	X	
30.0	2	1	1	1	1	1	1	1	1	1	2	2	2	3	4	4	4	4	5	5	5	4	3	3	2	2	2	1	1	1	1	1	1	1	1	1		
30.7a	2	2	1	1	1	1	1	1	1	1	3	4	6	5	5	5	5	5	6	5	5	4	3	2	3	3	3	3	1	2	2	2	2	1	2	3	1	
31.7	2	2	2	2	1	1	1	1	1	1	1	4	3	3	2	2	3	3	4	5	4	4	3	3	3	3	2	2	2	2	2	2	2	2	2	2	3	

Table 78b

Coronal observations at Climax, Colorado (5303A), west limb

Date GCT	Degrees south of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	Degrees north of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
Aug 3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	
6.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11.0a	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	1	1	1	1	2	1	1	3	2	2	2	1	1	1	1	-	-	-	-	-	-	
13.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	6	6	5	2	1	1	-	-	-	-	-	-	-	-	-	-	
16.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	1	-	-	-	-	-	-	-	-	-	X	X	X	X	X	-	
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	2	2	1	2	2	1	1	1	1	-	-	-	-	-	-	
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	1	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	2	4	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
19.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	4	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
20.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	
23.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	4	3	3	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	5	4	4	4	4	5	3	3	-	-	-	-	-	-	-	-	-	-	-	
25.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
28.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
30.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	
30.7	-	-	-	-	-	-	1	1	2	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31.7	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 79b

Coronal observations at Climax, Colorado (6374A), west limb

Date GCT	Degrees south of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	Degrees north of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
Aug 3.6	2	2	2	2	2	2	2	2	2	2	1	1	3	4	3	1	2	5	4	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
4.8a	3	3	3	2	2	2	2	2	3	2	2	2	3	3	3	4	4	3	3	3	3	4	4	3	2	2	2	2	2	2	X	X	X	X	X	X	
5.7a	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
6.7a	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	4	5	4	4	3	2	2	2	2	2	1	1	1	1	1	1	1	2	2	
7.7a	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	4	4	4	4	4	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	
8.7	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11.0a	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11.7a	2	2	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	2	4	4	3	4	3	2	2	2	2	2	2	1	1	1	3	3	3	3	
12.8	3	3	2	2	2	2	2	1	1	1	1	1	2	2	2	3	3	4	5	6	6	6	4	4	3	2	2	2	1	1	1	1	2	2	2	3	2
13.7a	2	2	3	1	1	1	1	1	1	1	2	2	2	2	4	4	5	5	5	6	16	10	8	5	2	2	2	2	2	2	2	2	2	2	2	3	
16.0a	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	4	4	3	2	1	1	1	X	X	X	X	X	X	X	
16.7	1	1	1	1	1	1	1	1	1	2	2	4	3	3	3	2	2	2	3	2	2	3	6	7	5	2	2	2	1	1	1	1	1	1	2	2	
17.7	1	1	1	1	1	1	1	1	1	2	3	3	4	3	4	3	2	2	2	2	3	3	3	3	5	3	1	1	1	1	1	1	1	1	1	1	
18.8	2	2	2	2	2	2	1	1	2	2	2	2	3	3	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
19.7a	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	4	2	3	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	
20.7a	2	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	2	2	
21.7a	1	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	1	1	1	2	2	2	2	-	-	-	-	-	1	1	1	1	1	1	1	1
23.9a	-	-	-	-	-	-	-	-	-	-	3	4	4	4	4	4	5	5	4	6	7	6	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	5	4	4	4	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7a	2	-	-	-	-	-	-	-	-	3	2	2	2	2	2	2	4	6	4	3	3	3	4	4	3	2	2	1	1	1	1	1	1	1	1	2	
26.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
28.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
30.0	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2	3	3	4	5	5	3	2	2	2	2	2	2	1	1	1	1	1	1	2	2	
30.7	1	2	2	1	1	1	1	1	1	1	3	5	6	4	4	5	5	5	5	5	5	4	3	2	1	1	3	2	1	1	1	1	1	1	2	2	
31.7	3	1	1	1	1	-	-	-	-	1	2	5	4	4	4	4	4	4	4	5	5	5	3	3	2	2	2	2	1	1	1	1	1	2	2	3	2

Table 80a

Coronal observations at Climax, Colorado (6702A), east limb

Date GCT	Degrees north of the solar equator																				0°	Degrees south of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90			
1953																																								
Aug 3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.8a	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.0a	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.8a	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
28.7a	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
30.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 81a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date GCT	Degrees north of the solar equator																				0°	Degrees south of the solar equator																			
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90				
1953																																									
Aug 1.8	-	-	-	2	2	3	2	2	2	3	3	3	4	2	3	4	13	3	2	-	-	2	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.7	-	-	-	-	-	3	3	3	3	4	3	4	3	3	3	5	11	9	4	3	3	3	3	2	3	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	
3.8a	-	-	-	-	3	3	3	3	4	4	4	3	4	3	3	3	4	4	4	3	4	4	3	3	3	-	-	-	2	3	3	3	2	2	-	-	-	-	-	-	
4.8a	-	-	-	-	3	3	4	3	4	4	3	3	3	4	3	3	5	7	6	4	3	8	4	5	4	3	3	4	4	4	2	2	3	3	X	X	X	X	X	X	
5.7a	-	-	2	2	3	3	4	4	3	3	3	3	3	3	3	2	5	8	11	6	5	5	8	4	4	3	3	2	3	2	2	3	3	-	-	-	3	3	3	3	
7.7a	-	-	-	-	-	2	2	2	3	3	3	3	3	3	3	4	10	8	6	5	4	3	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	
8.7a	-	-	-	-	-	-	-	-	2	3	3	3	3	4	5	5	11	10	5	4	3	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9.7	-	-	-	-	-	-	-	-	2	3	3	2	2	3	2	4	8	11	10	11	10	5	7	3	3	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	
10.7	-	-	-	-	-	-	2	3	3	3	2	3	4	4	4	8	7	8	9	11	10	9	7	3	3	2	3	3	2	2	2	3	2	-	-	-	-	-	-	-	
11.7a	-	-	-	-	-	3	2	2	3	3	2	3	3	3	3	3	4	4	3	4	3	3	2	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	
12.7a	-	-	-	-	-	2	2	2	2	3	3	2	3	3	3	2	3	3	2	2	3	2	3	2	3	3	2	-	-	-	-	-	-	-	X	X	X	X	X	X	
13.7a	-	-	-	-	2	2	2	3	2	3	3	2	3	3	3	3	3	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14.7a	-	-	-	-	-	-	-	-	2	3	3	2	2	2	3	3	3	2	2	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	
15.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19.7	-	-	-	-	-	-	2	2	2	2	3	2	2	3	2	2	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21.7	-	-	-	-	-	-	-	3	2	2	2	2	3	3	3	3	2	-	-	2	2	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24.7a	-	-	-	2	2	3	3	2	2	3	3	4	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
25.6	-	-	-	-	-	-	-	-	-	2	2	3	3	3	4	4	3	3	2	2	2	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	
26.6	-	-	-	-	-	-	-	-	2	2	3	3	3	3	6	8	3	2	2	3	3	3	2	-	-	3	3	3	2	2	3	-	-	-	-	-	-	-	-	-	
27.7	2	3	-	2	-	-	-	2	3	3	2	2	3	3	3	8	12	3	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	
28.7	-	3	2	2	2	2	-	-	-	2	2	2	3	3	3	3	2	2	2	-	-	-	-	-	-	-	-	2	2	3	-	-	-	-	-	-	-	-	-	-	
29.7a	-	-	-	-	-	-	-	-	-	2	2	3	3	2	3	4	4	5	6	4	5	4	4	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	
30.6a	-	-	-	-	-	-	-	2	2	3	3	3	3	4	4	4	4	3	3	4	4	5	4	3	2	2	-	-	-	2	2	-	-	-	-	-	-	-	-	-	
31.6a	-	3	3	3	2	3	3	3	2	2	3	3	2	2	4	3	3	3	3	2	4	5	5	4	3	3	3	2	2	3	-	-	-	-	-	-	-	-	-	-	

Table 80b

Coronal observations at Climax, Colorado (6702A), west limb

Date GCT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																						
Aug 3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	
5.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8.7	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11.0a	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	-	
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
28.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
30.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Table 81b

Coronal observations at Sacramento Peak, New Mexico (5303A), west limb

Date GCT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																						
Aug 1.8	-	-	-	-	-	2	2	3	3	3	2	2	2	2	2	3	3	3	3	2	3	3	3	3	4	3	3	3	3	3	3	2	2	2	-	-	-	
2.7	-	-	-	-	-	-	2	3	4	4	5	4	3	3	3	3	3	2	2	3	2	2	3	2	3	4	3	3	2	3	3	2	2	-	-	-	-	
3.8a	-	-	-	-	3	3	2	2	2	3	3	2	2	3	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	2	2	2	-	-
4.8a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	4	3	3	3	2	-	-	-	-	-
5.7a	3	3	3	2	2	2	-	2	3	-	3	3	-	3	3	2	3	3	3	3	2	3	2	2	3	3	3	3	3	3	2	2	-	-	-	-	-	
7.7a	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	X	X	X	X	X	X	X	X	X	3	3	2	2	3	2	2	-	-	-	-	-	-
8.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	2	3	3	2	2	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	2	2	3	2	2	2	2	3	3	3	3	3	3	2	2	2	2	2	3	3	3	2	2	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	2	2	3	3	3	2	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	2	2	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2	2	2	3	3	2	-	-	-	-	-	-
13.7	-	-	-	-	2	2	2	-	-	-	-	-	2	2	3	3	2	2	2	3	8	13	12	8	3	2	2	2	3	3	2	2	-	-	-	-	-	-
14.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	5	11	13	11	5	4	3	2	3	3	2	2	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	2	2	2	2	3	8	7	5	4	3	3	3	3	2	-	-	-	-	-	-	-
19.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	3	2	3	4	5	4	2	-	-	-	-	-
21.7	-	3	3	3	3	2	2	3	3	4	3	4	3	2	2	3	2	3	4	4	11	17	10	8	6	4	3	3	3	4	4	3	2	-	-	-	-	-
24.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	3	2	2	3	4	2	-	-	-	-	-	-
25.6	-	-	2	2	3	3	3	2	2	3	3	3	-	-	2	2	3	3	4	5	6	7	7	8	7	5	3	3	3	2	2	2	2	-	-	-	-	-
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	2	2	-	-	-	-	-	-	-
27.7a	3	2	3	3	3	3	2	2	2	2	3	3	3	2	2	3	3	2	3	3	3	3	3	3	2	2	3	3	2	2	2	3	3	2	2	2	2	2
28.7a	-	-	-	-	-	2	2	2	3	3	3	3	3	2	2	2	3	3	3	4	-	-	-	-	2	2	3	3	3	2	2	-	-	-	-	-	-	-
29.7a	-	-	3	3	3	2	3	3	2	3	3	3	3	4	3	3	2	2	3	3	3	2	2	2	-	3	3	3	2	2	2	-	-	-	-	-	-	-
30.6a	-	-	-	-	-	-	-	3	3	3	3	3	2	3	2	2	2	3	3	3	2	-	-	-	2	2	3	3	2	2	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	2	2	3	3	3	3	3	2	2	3	3	2	2	2	2	2	2	-	-	-	3	4	4	3	3	2	2	2	-	-	-	-	-

Table 82a

Coronal observations at Sacramento Peak, New Mexico (6374A), east limb

Date GCT	Degrees north of the solar equator																				0°	Degrees south of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5				5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
1953																																								
Aug 1.8	3	5	5	3	2	2	3	-	-	-	2	3	4	5	6	7	20	14	11			8	6	5	8	7	4	5	3	3	2	-	2	2	2	3	3	3	3	
2.7	3	3	4	4	3	3	2	-	-	2	2	4	5	5	4	8	7	7	6			12	8	8	7	6	5	5	4	3	2	-	2	2	3	2	2	3	3	
3.8a	4	3	4	3	2	3	2	3	2	3	4	4	4	3	4	4	4	4	7			5	5	4	3	3	3	4	4	3	-	-	2	2	2	3	3	3	2	
4.8a	3	3	3	2	3	2	2	2	2	-	2	3	3	2	2	3	5	6	5			4	5	5	5	4	4	3	3	2	3	2	-	3	3	-	X	X	X	
5.7a	2	5	4	4	3	2	2	-	2	2	2	2	3	2	3	2	3	5	4			3	7	5	5	4	3	3	2	2	2	2	3	3	-	-	2	2	3	
7.7a	3	2	2	3	3	3	-	2	2	2	2	3	3	3	3	3	8	6	3			3	5	3	4	3	3	2	3	2	2	2	-	3	-	-	2	2	2	
8.7a	2	2	2	3	2	2	2	3	2	-	2	2	3	3	2	2	8	10	6			4	5	4	3	4	4	3	3	3	2	-	-	-	-	2	2	2	-	
9.7	2	-	4	2	3	3	2	-	-	-	3	2	3	2	3	4	6	11	10			11	7	6	3	3	-	-	-	2	2	2	-	2	2	2	2	3	2	
10.7	3	2	2	2	2	3	2	2	2	2	3	3	3	5	5	6	18	11	8			11	12	6	4	5	3	3	2	2	-	-	-	-	-	-	2	2	-	
11.7a	2	2	3	3	2	3	3	-	-	2	2	3	2	2	3	3	4	5	4			4	8	5	3	3	2	3	2	2	-	-	2	-	-	-	-	-	-	
12.7a	2	3	2	3	3	2	2	3	-	2	2	3	2	2	3	3	4	2	3			3	5	4	3	4	3	2	2	2	-	-	-	-	X	X	X	X	X	
13.7a	3	4	2	2	3	-	-	2	2	-	2	5	4	4	3	3	3	3	3			4	5	7	5	2	3	2	-	-	-	-	2	2	2	2	3	-	2	
14.7a	2	3	2	2	2	3	2	2	-	-	2	3	3	3	2	2	3	3	4			4	5	6	4	4	3	3	-	2	2	2	2	-	-	-	-	-	-	
15.7a	-	-	-	-	-	-	-	-	-	2	3	3	3	2	2	-	2	3	3			4	4	5	3	2	3	2	2	2	-	-	-	-	-	-	-	-	-	
19.7	3	2	2	2	-	2	2	2	-	2	3	3	3	3	3	4	4	5	6			6	5	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
21.7	2	3	3	2	3	3	2	2	2	3	4	5	3	4	4	5	5	5	6			5	4	5	8	4	3	4	3	3	3	2	3	-	-	-	-	-	-	
24.7a	3	3	3	3	2	2	2	2	2	2	3	3	3	4	X	X.	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
25.6	3	3	3	3	2	2	3	-	-	2	2	-	3	5	5	6	8	5	4			5	5	3	4	3	2	2	2	2	-	2	2	2	2	3	2	-	2	
26.6	3	2	2	3	3	2	2	-	-	2	3	3	4	3	3	14	12	5	5			7	5	2	3	3	2	2	3	2	-	-	-	-	-	-	2	-	2	
27.7	3	3	2	3	3	2	2	-	2	2	2	2	4	3	3	8	16	8	5			4	3	4	3	3	2	2	2	2	2	-	2	-	-	2	-	2	3	
28.7	2	3	3	2	3	2	-	-	-	2	3	4	3	2	4	10	12	6	4			4	4	3	4	3	2	2	2	-	-	-	2	2	-	3	2	-	2	
29.7a	3	3	3	2	2	-	-	-	-	-	3	5	4	3	5	4	6	7	7			5	4	5	4	4	3	2	2	2	-	-	-	-	-	-	-	-	-	
30.6a	3	3	3	3	3	2	-	2	2	2	3	4	7	6	6	5	6	6	5			5	5	4	3	4	3	4	3	2	3	2	3	2	2	2	-	-	3	
31.6a	-	2	-	-	-	-	2	-	-	-	2	4	3	3	3	-	-	-	2			3	4	3	4	3	2	2	3	-	2	2	-	-	-	2	2	2	2	

Table 83a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

Date GCT	Degrees north of the solar equator																				0°	Degrees south of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5				5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	
1953																																								
Aug 1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
4.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X		
5.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
8.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	2			2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X		
13.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
14.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
15.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
26.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
29.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
30.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Table 82b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
Aug 1.8	3	2	2	2	2	2	3	3	2	2	3	5	4	5	9	10	8	8	5	4	5	5	5	4	4	4	5	5	4	2	3	3	3	3	4	3	
2.7	3	3	3	-	2	2	2	-	-	-	-	3	4	5	5	6	6	5	7	5	4	4	4	5	4	4	3	4	5	2	3	3	2	2	3	3	3
3.8a	2	-	2	-	2	2	2	3	2	2	-	-	-	3	3	2	3	3	3	5	5	4	5	3	2	3	4	5	5	-	3	2	3	2	3	4	4
4.8a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	3	3	2	2	3	2	2	3	3	3
5.7a	3	3	2	-	2	-	-	3	2	2	2	3	2	3	3	2	3	3	2	3	3	3	3	2	3	2	5	5	4	3	3	2	2	3	3	3	2
7.7a	2	3	3	2	2	-	3	2	2	2	3	3	2	2	3	X	X	X	X	X	X	X	X	X	X	X	2	3	-	-	2	2	2	2	2	2	2
8.7a	-	2	2	-	-	-	2	2	-	-	-	2	3	4	5	4	5	4	4	5	5	5	4	3	2	2	2	3	2	2	3	2	2	2	3	2	2
9.7	2	3	3	3	3	2	2	2	-	-	3	3	3	3	5	4	4	4	7	8	5	4	5	4	4	3	2	3	3	2	-	2	-	2	2	3	2
10.7	-	-	-	2	2	2	2	2	2	3	3	3	3	3	4	5	4	8	7	6	5	4	3	3	4	3	2	3	3	2	2	-	-	-	2	3	3
11.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	2	3	3	3	5	4	8	5	3	3	3	-	-	2	2	2	2	2	2	2	2	2
12.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2	3	3	2	2	-	2	-	2	3	2		
13.7	2	2	2	2	-	-	-	-	-	2	2	3	3	3	3	4	5	5	6	6	11	23	16	14	11	3	2	-	2	2	-	-	-	3	2	3	3
14.7a	-	-	2	-	-	-	2	-	-	2	-	-	2	3	3	4	4	4	5	5	6	16	20	8	5	3	2	2	2	2	2	2	2	2	3	3	2
15.7	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	2	3	3	4	10	16	12	3	2	2	2	2	-	-	-	-	-	-	-	-
19.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	3	2	2	-	-	-	-	-	-	-	3
21.7	-	3	3	-	-	2	3	-	-	3	3	3	2	3	4	5	5	6	4	12	14	12	11	3	2	3	3	3	2	2	-	2	2	2	2	-	2
24.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	3	2	2	-	-	2	-	2	2	2	3	
25.6	2	2	2	2	-	2	-	2	2	3	3	2	2	3	6	7	7	15	13	8	5	6	10	13	5	3	3	2	3	3	3	3	3	2	2	3	3
26.6a	2	2	3	3	2	3	2	2	-	-	3	3	5	4	5	4	5	6	5	4	3	4	3	4	3	3	3	2	2	2	2	2	-	2	2	2	3
27.7a	3	3	2	2	-	3	-	-	-	-	2	2	3	3	3	3	4	4	3	2	4	2	3	2	2	3	3	2	-	2	2	2	2	2	2	3	3
28.7a	2	-	-	-	2	-	2	2	-	-	2	3	3	3	4	3	2	-	2	3	3	4	2	2	2	3	4	2	2	3	2	-	2	-	3	2	2
29.7a	-	-	-	-	-	-	-	-	-	-	3	2	3	4	5	6	5	5	5	6	6	6	5	4	4	4	5	4	3	2	-	2	2	-	2	3	3
30.6a	3	2	3	2	-	2	2	-	-	-	2	4	5	5	4	3	3	7	6	5	8	5	4	3	2	3	5	4	3	3	2	2	-	-	3	3	3
31.6a	2	2	-	2	-	-	-	-	-	-	-	3	4	3	4	3	3	3	3	4	5	4	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-

Table 83b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
Aug 1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.8a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
5.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
8.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 84

Zürich Provisional Relative Sunspot Numbers

August 1953

Date	R_Z*	Date	R_Z*
1	0	17	47
2	7	18	31
3	12	19	26
4	12	20	24
5	11	21	17
6	10	22	10
7	16	23	8
8	10	24	0
9	29	25	0
10	48	26	0
11	73	27	0
12	77	28	0
13	73	29	0
14	65	30	0
15	62	31	0
16	54	Mean:	23.3

*Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 85

Solar Flares, August 1953

Observatory	Date 1953	Time Observed Beginning (GCT)	Time Observed Ending (GCT)	Duration (Min)	Area (Mill) (of) (Visible) (Hemisph)	Position Latitude (Deg)	Position Longitude Diff (Deg)	Time of Maximum (GCT)	Int. of Maximum	Relative Area of Maximum (Tenths)	Importance	SID Observed
Sac.Peak	Aug. 7	1355	1430	35	250	N17	E08	1408	11	4	1	
McMath	7	1400				N15	E08				1	
Sac.Peak	9	2235	2404A	App.90	75	N19	W31	2343	10	4	1 -	
McMath	11	1332				N10	E80				1 -	
"	11	1520				N10	E80				1 -	1525
Sac.Peak	11	1530B	1558	App.28	85	N12	E71	1545	10	8	1 -	"
McMath	11	1536	1551	15		N18	W47				1 +	
Sac.Peak	11	1538	1552	14	87	N20	W48	1542	20	2	1	
Wendel.	14	0634				N12	E40				-	
"	14	1103B	1114	App.11	102	N12	E39	1104			-	
Wendel.	14	1116	1130	14	87	N12	E41	1119			-	
McMath	14	1245				S05	E40				1	
Sac.Peak	14	1505	1535	30	142	N12	E41	1512	20	4	2	
McMath	14	1510				N11	E35				1 +	
Sac.Peak	15	1910	2015	65	62	N10	E12	1919	10	3	1 -	

Sac.Peak = Sacramento Peak.
Wendel. = Wendelstein.

B Flare began before given time.
A Flare ended after given time.

Table 86

Indices of Geomagnetic Activity for July 1953

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1953	C	Values Kp three-hour interval 1 2 3 4	5 6 7 8	Sum	Final Selected Days
1	1.1	3+ 4- 5- 6-	5- 2+ 3- 3+	30+	Five
2	1.1	4+ 5- 5- 3+	4o 4- 4o 4o	33-	Quiet
3	0.8	3+ 2+ 3+ 3+	4o 3o 3o 3-	25o	
4	0.8	3o 3+ 4- 4+	4- 3o 3o 2o	26o	11
5	0.6	2o 3o 4o 3-	2+ 2- 2o 2o	20-	16
					17
6	0.7	5- 1+ 2+ 2+	1o 1+ 1o 3o	17o	18
7	1.0	3+ 4o 4- 2-	3+ 3+ 3o 4o	26+	21
8	0.8	4- 3- 3- 3o	2- 2+ 4- 3o	23-	
9	0.6	2+ 1+ 2o 2-	2o 2o 4o 3+	19-	
10	0.2	3- 2o 3- 1-	1- 1+ 1- 1-	11+	
11	0.2	1+ 3o 1- 1+	1+ 0+ 1- 1o	10-	Five
12	0.6	1- 2- 0+ 0+	2- 2- 5- 4+	15+	Disturbed
13	0.8	2o 2+ 4- 3+	2+ 2+ 2o 3-	21-	
14	0.6	1o 1- 1- 1o	2o 4o 4o 2+	16-	1
15	0.8	3o 4- 4- 3-	3+ 3- 3- 1o	23-	2
					23
16	0.0	1+ 2- 1o 1-	0+ 0+ 0o 1-	6o	27
17	0.1	0+ 1o 2+ 2o	1+ 1- 0+ 1-	9-	29
18	0.2	2+ 2- 1- 1+	2o 1- 0+ 1+	10+	
19	0.2	3- 2o 1+ 1-	1- 0+ 2- 2o	11+	
20	0.4	3- 3- 1+ 2o	2+ 2o 0+ 1o	14+	
21	0.2	2- 1+ 2+ 2o	1- 1- 1- 2o	11+	Ten
22	0.4	0+ 0+ 2- 2-	1- 2o 1+ 3o	11o	Quiet
23	1.5	3+ 4+ 3+ 5+	6- 5+ 5- 5+	37+	
24	0.8	4+ 2- 1+ 3+	3- 3o 3- 2+	21+	10
25	0.6	0+ 1o 1+ 1o	2o 3o 4- 3-	15o	11
					16
26	1.0	4+ 3o 3o 3o	4- 2+ 4o 4o	27+	17
27	1.4	4+ 6o 6- 4+	5- 5o 5- 3o	38-	18
28	1.2	4- 5- 5o 4-	3+ 3+ 4- 3+	31-	19
29	1.2	4o 5- 4+ 4+	3+ 4o 4+ 5-	34-	20
30	1.0	4+ 3o 4+ 4-	4o 3+ 3+ 4o	30o	21
31	0.8	4o 3+ 4- 4o	4- 2+ 2o 2-	25-	22
					25
Mean	0.70				

Table 87

Sudden Ionosphere Disturbances Observed at Washington, D. C.

August 1953

1953 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
August 11	1536	1550	Ohio, D. C., England, Mexico	0.02	

*Ratio of received field intensity during SID to average field intensity before and after, for station KQ2XAU (formerly W8XAL), 6080 kilocycles, 600 kilometers distant.

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

GRAPHS OF IONOSPHERIC DATA

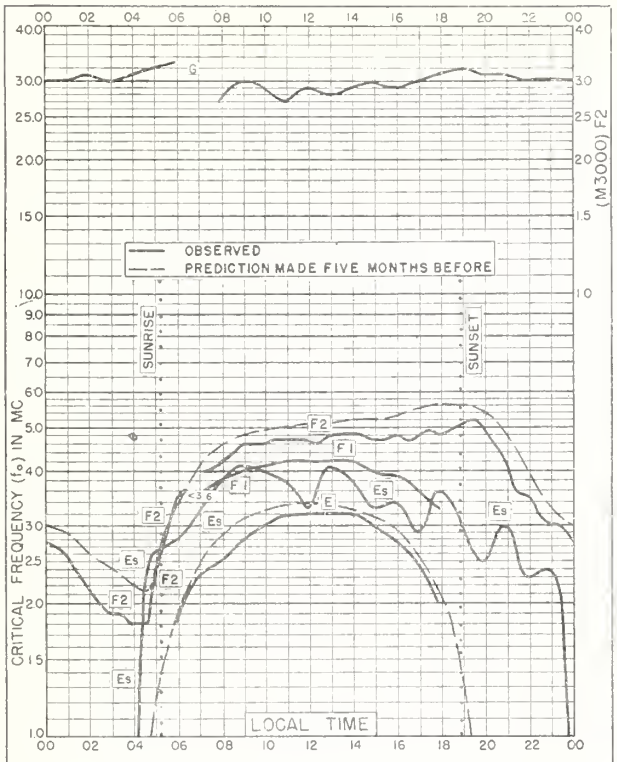


Fig. 1. WASHINGTON, D.C.
38.7° N, 77.1° W
AUGUST 1953

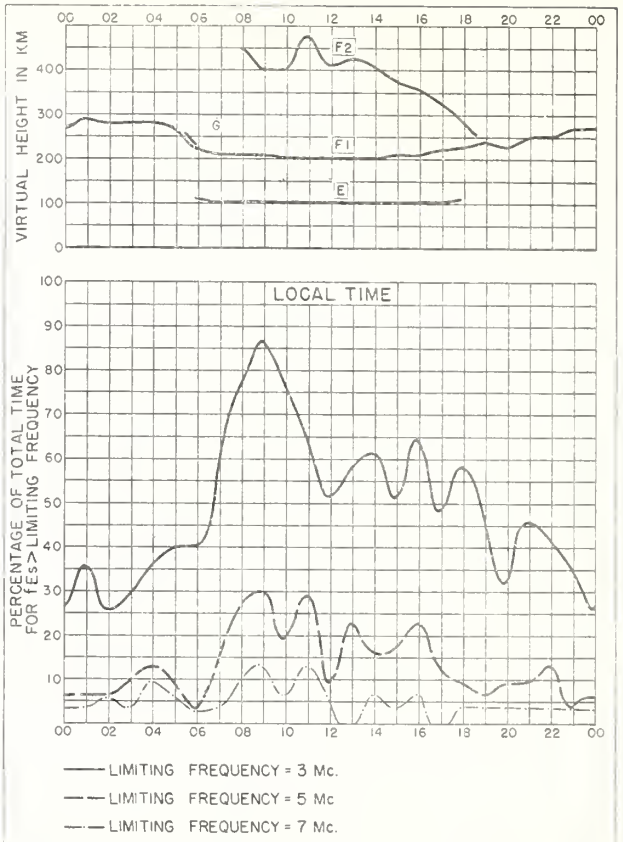


Fig. 2. WASHINGTON, D.C. AUGUST 1953

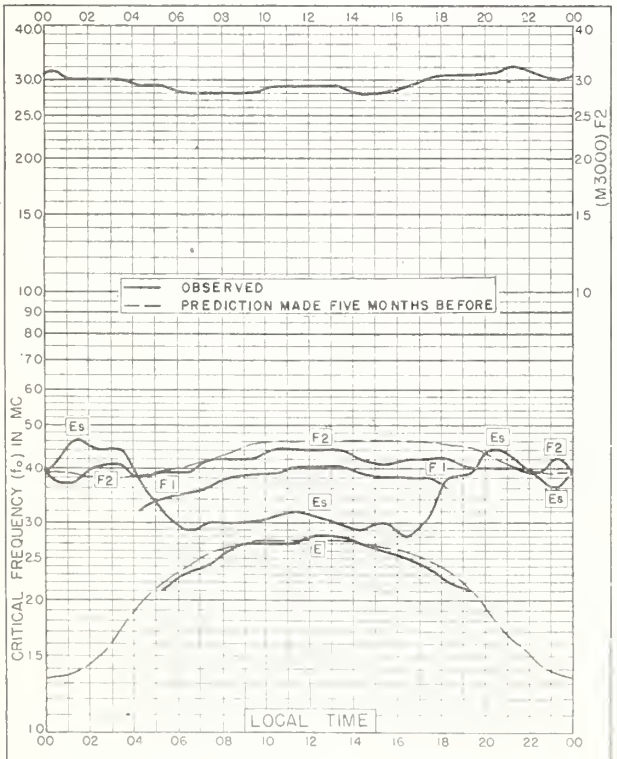


Fig. 3. TROMSO, NORWAY
69.7° N, 19.0° E
JULY 1953

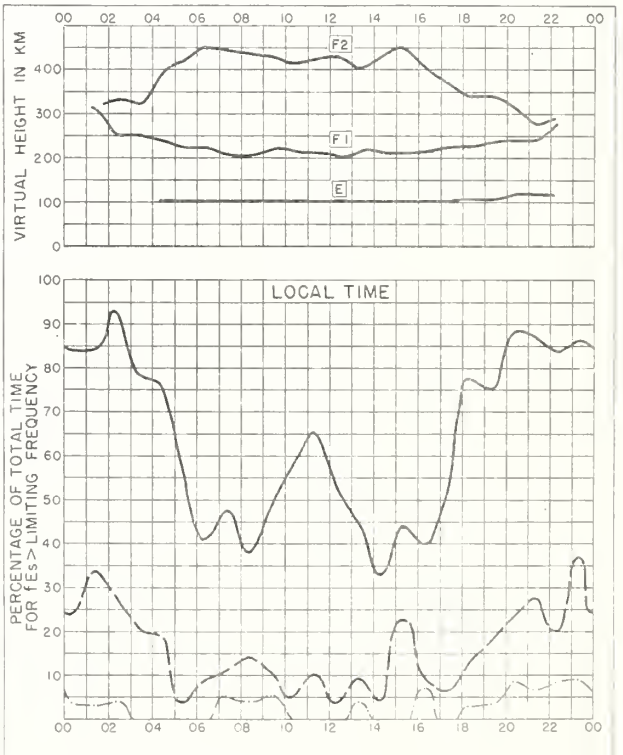


Fig. 4. TROMSO, NORWAY JULY 1953

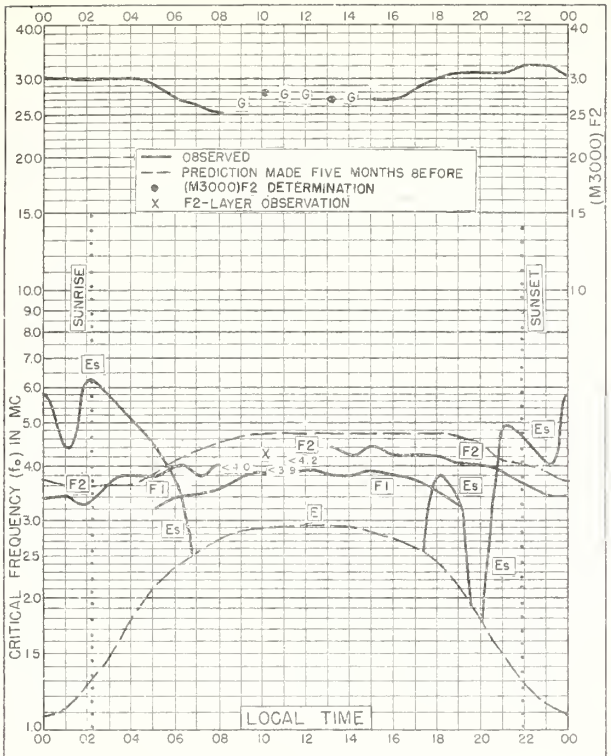


Fig. 5. FAIRBANKS, ALASKA
64.9°N, 147.8°W JULY 1953

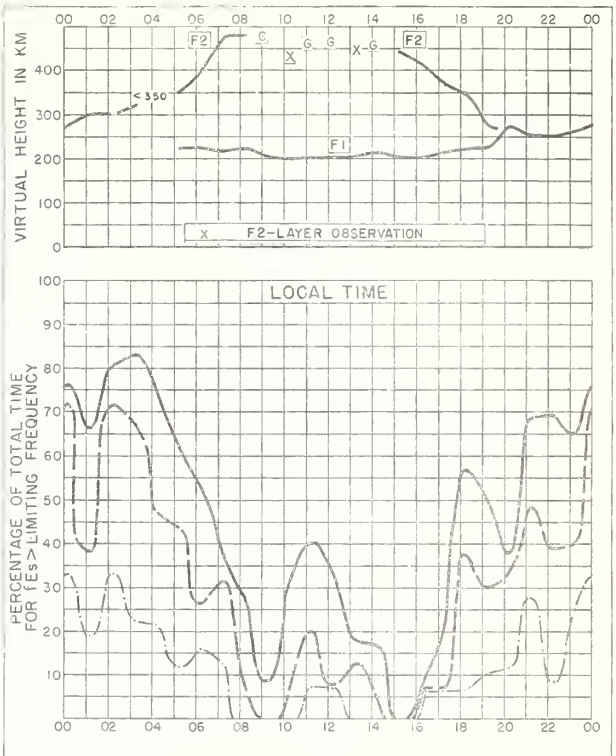


Fig. 6. FAIRBANKS, ALASKA JULY 1953

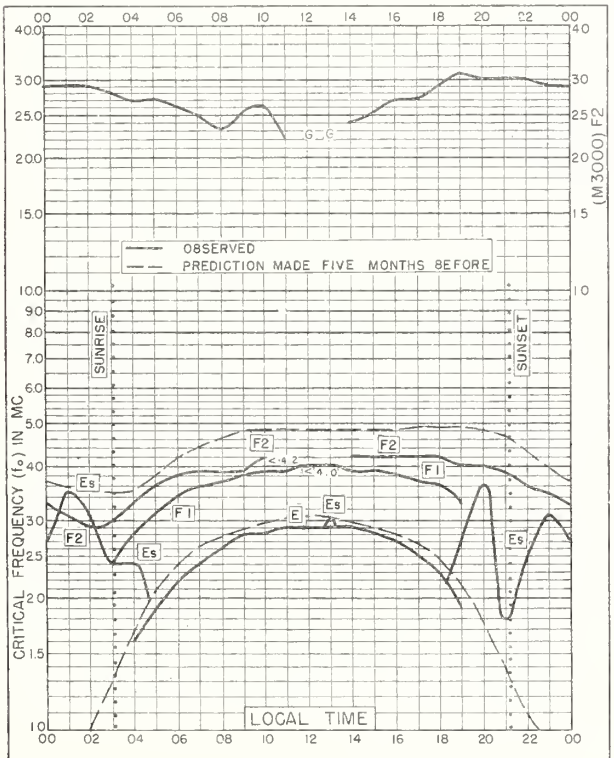


Fig. 7. ANCHORAGE, ALASKA
61.2°N, 149.9°W JULY 1953

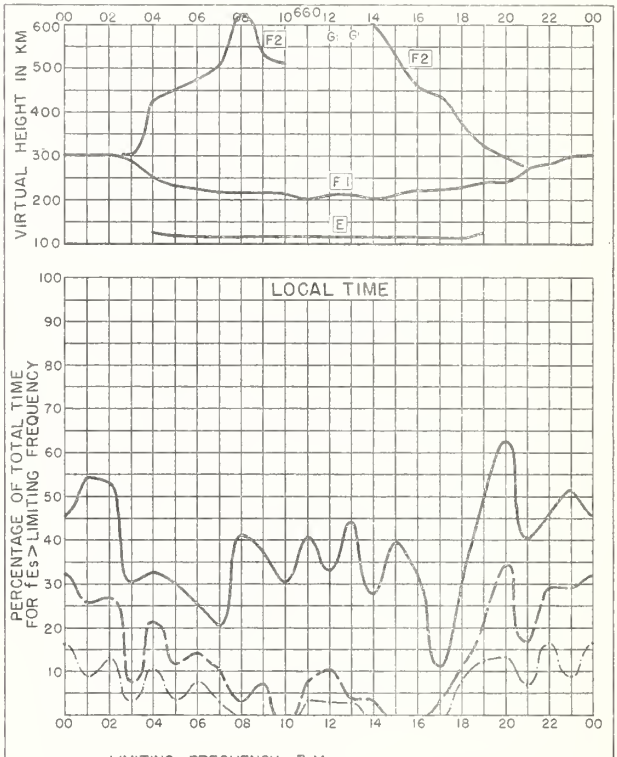


Fig. 8. ANCHORAGE, ALASKA JULY 1953

NBS 490

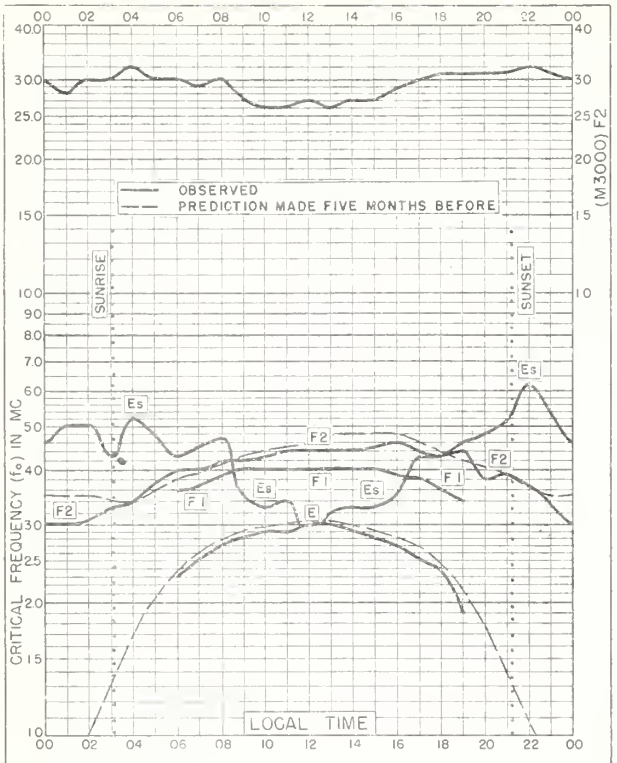


Fig. 9. NARSARSSUAK, GREENLAND
61.2° N, 45.4° W JULY 1953

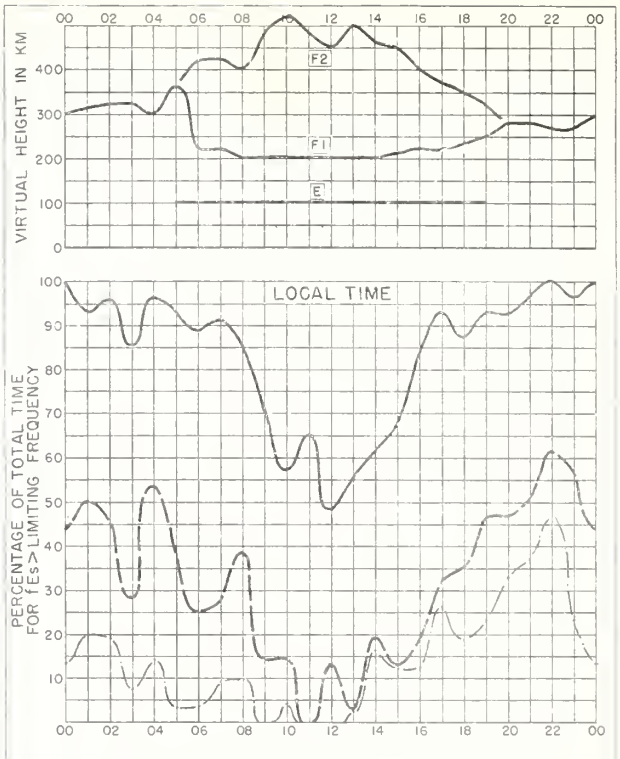


Fig. 10. NARSARSSUAK, GREENLAND JULY 1953

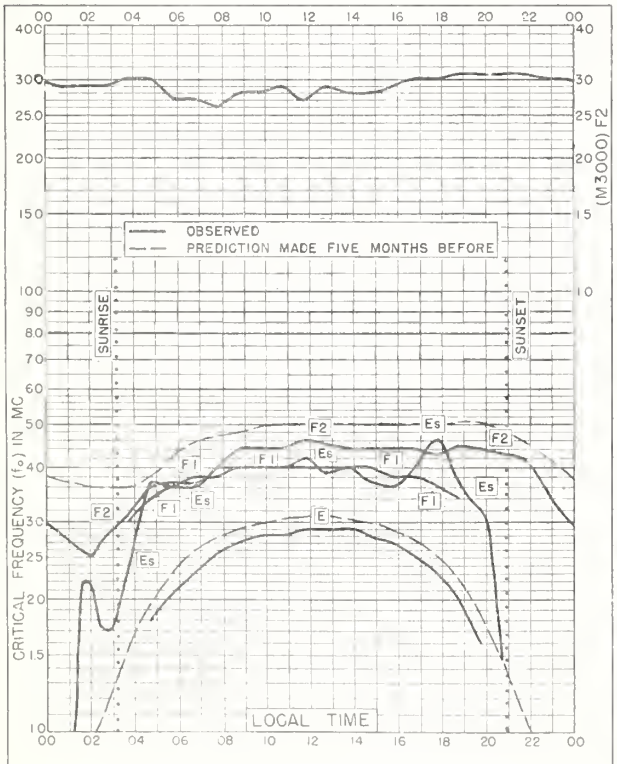


Fig. 11. OSLO, NORWAY
60.0° N, 11.1° E JULY 1953

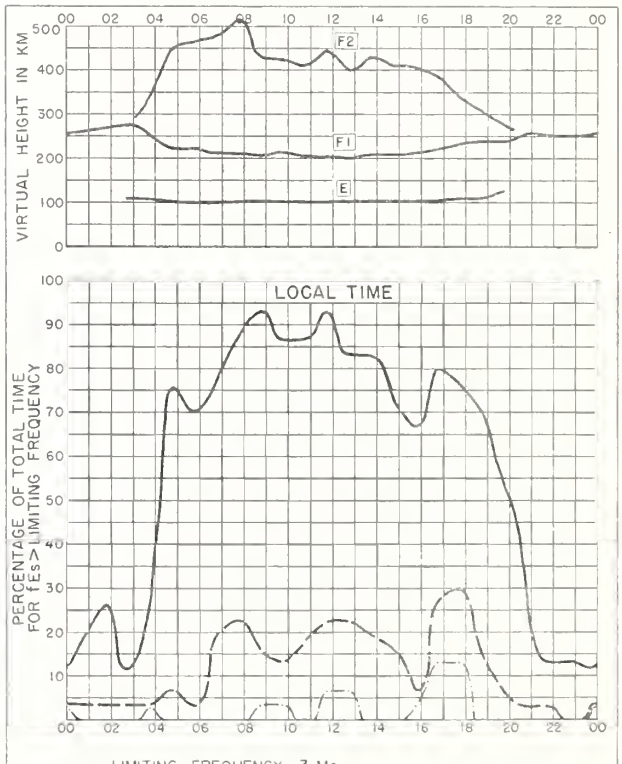


Fig. 12. OSLO, NORWAY JULY 1953

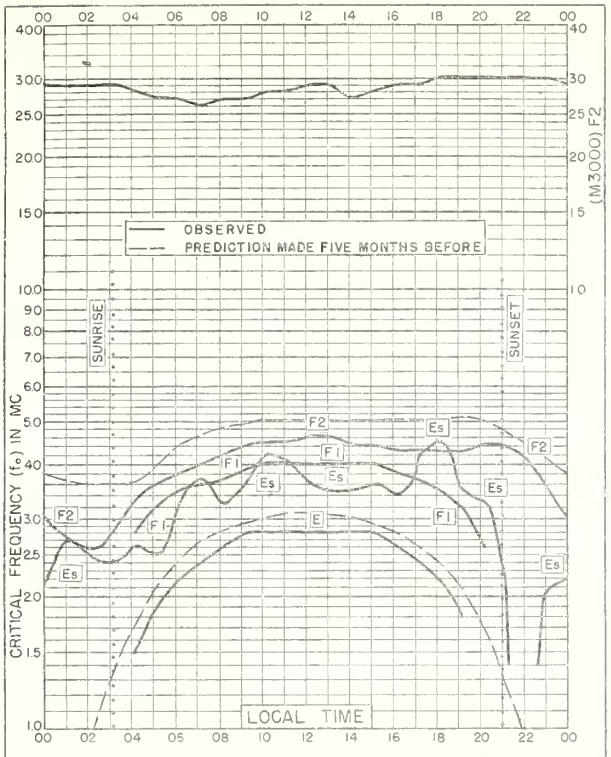


Fig. 13. UPSALA, SWEDEN
59.8°N, 17.6°E JULY 1953

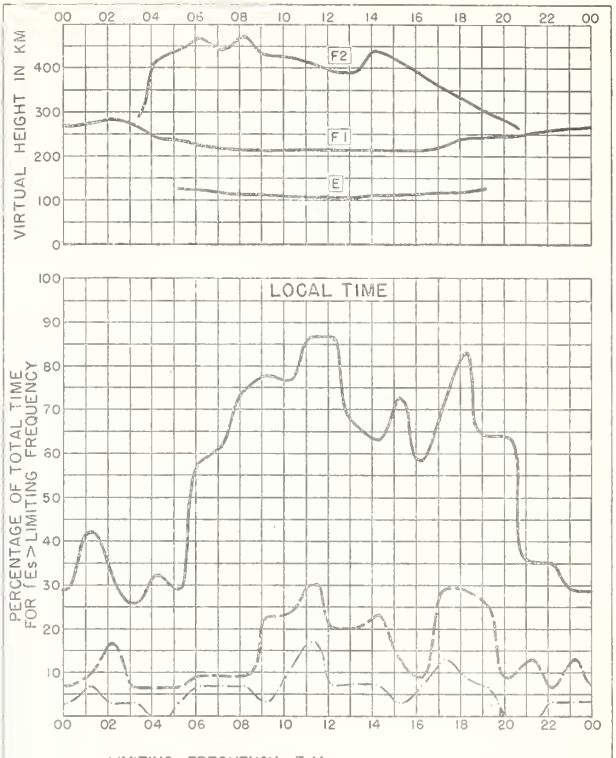


Fig. 14. UPSALA, SWEDEN JULY 1953

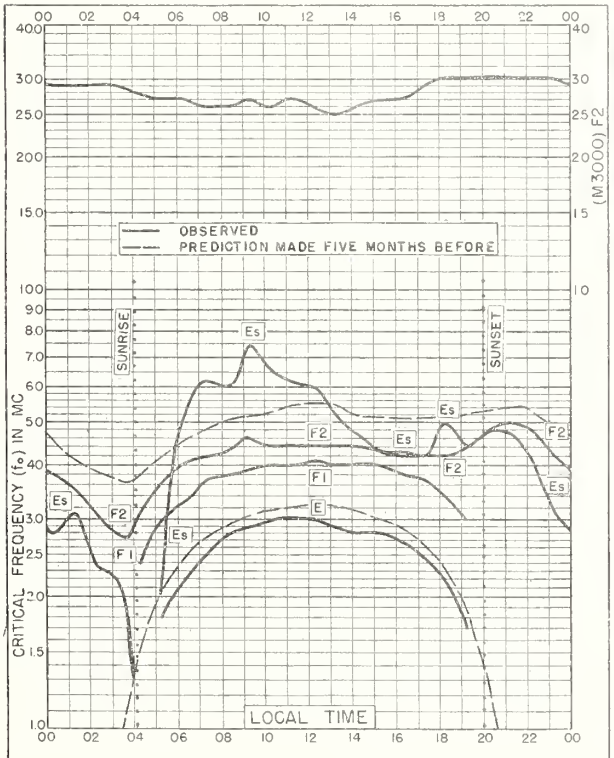


Fig. 15. ADAK, ALASKA
51.9°N, 176.6°W JULY 1953

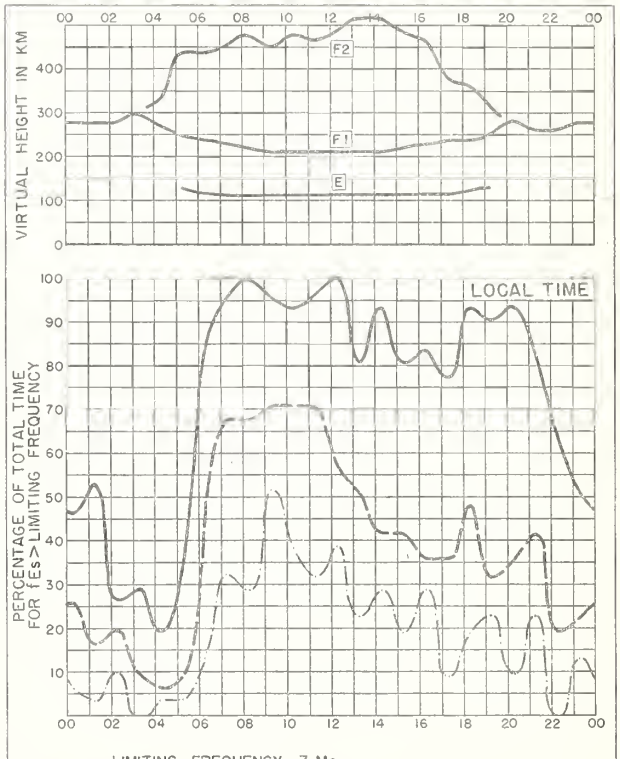


Fig. 16. ADAK, ALASKA JULY 1953

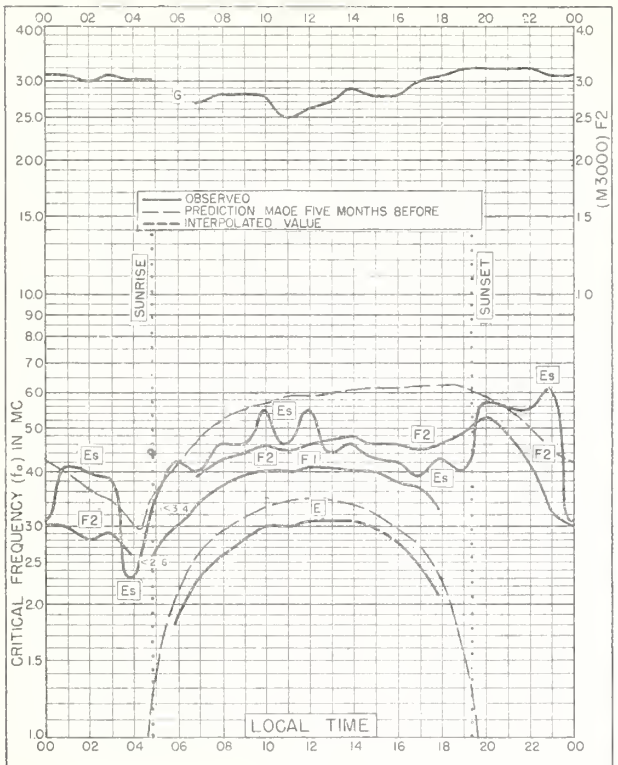


Fig. 17. SAN FRANCISCO, CALIFORNIA
37.4° N, 122.2° W JULY 1953

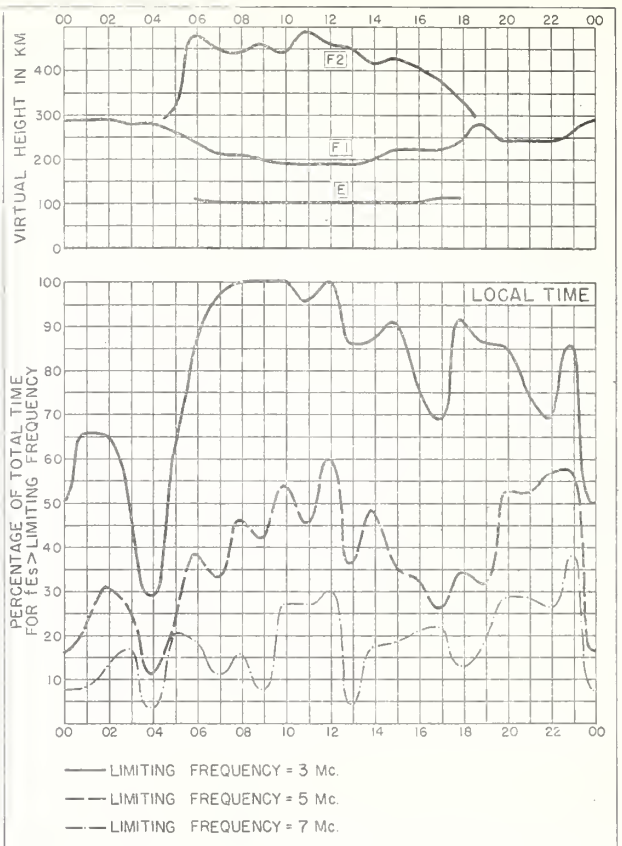


Fig. 18. SAN FRANCISCO, CALIFORNIA JULY 1953

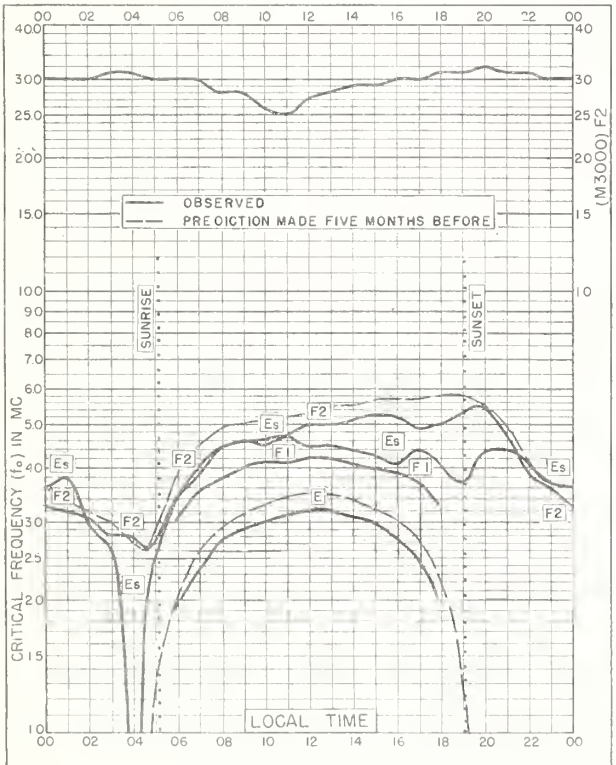


Fig. 19. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W JULY 1953

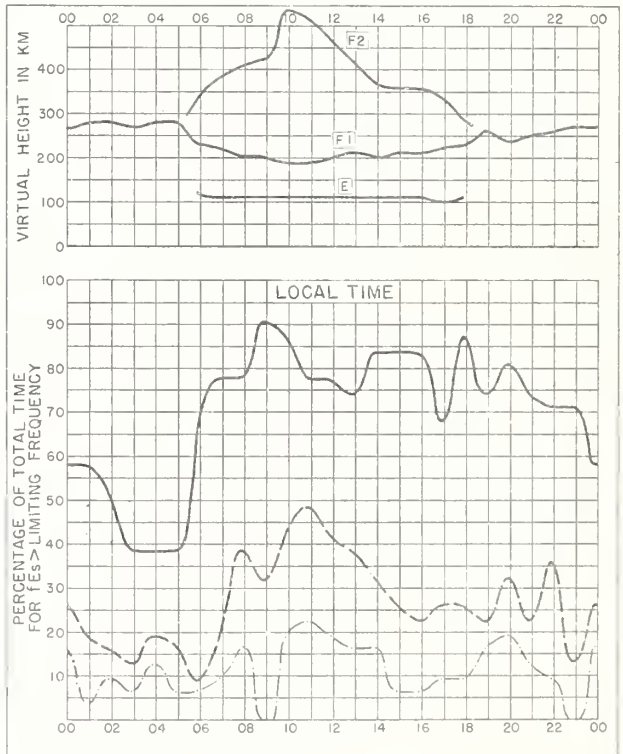


Fig. 20. WHITE SANDS, NEW MEXICO JULY 1953

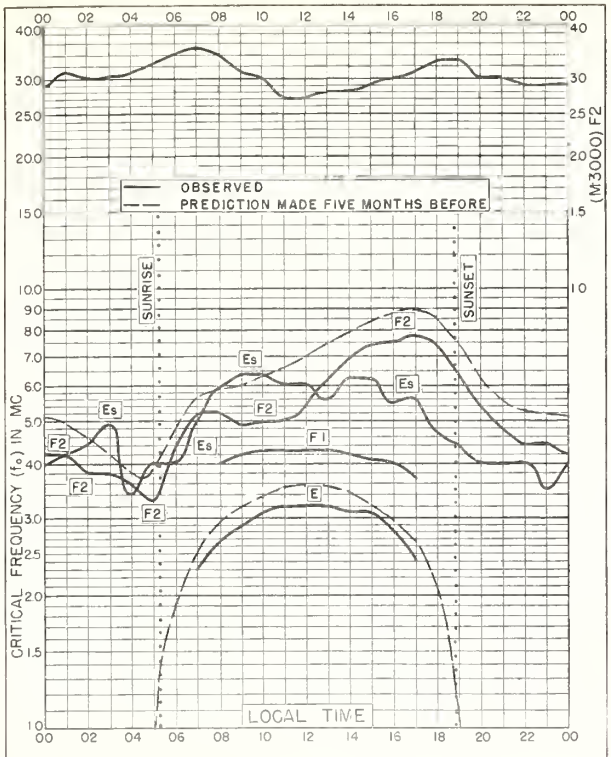


Fig. 21. OKINAWA I.
26.3° N, 127.8° E JULY 1953

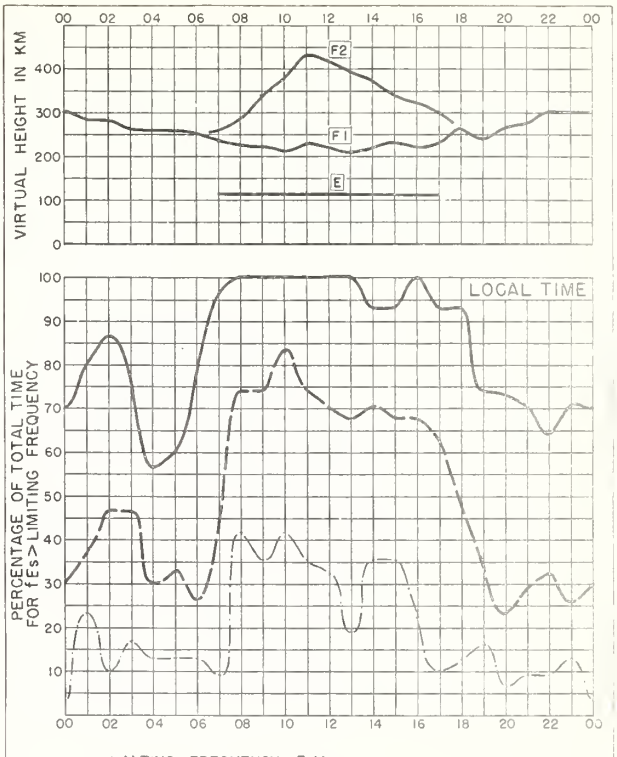


Fig. 22. OKINAWA I. JULY 1953

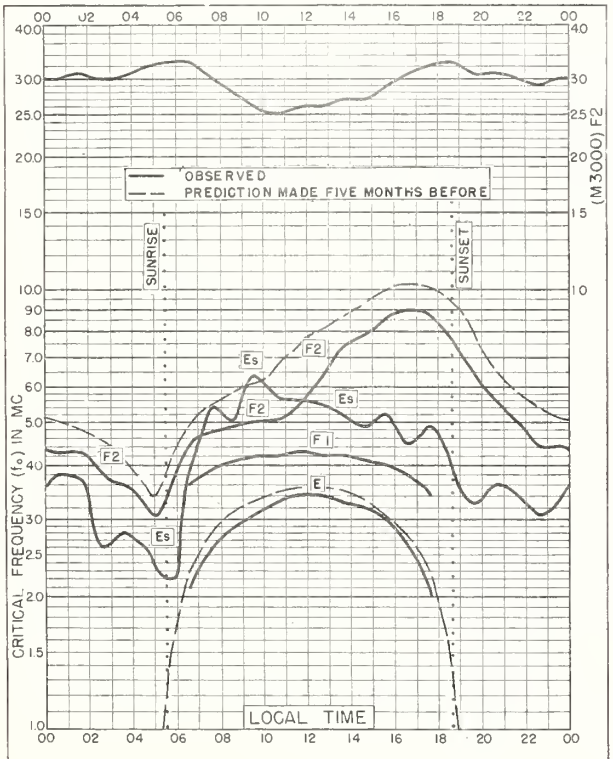


Fig. 23. MAUI, HAWAII
20.8°N, 156.5°W JULY 1953

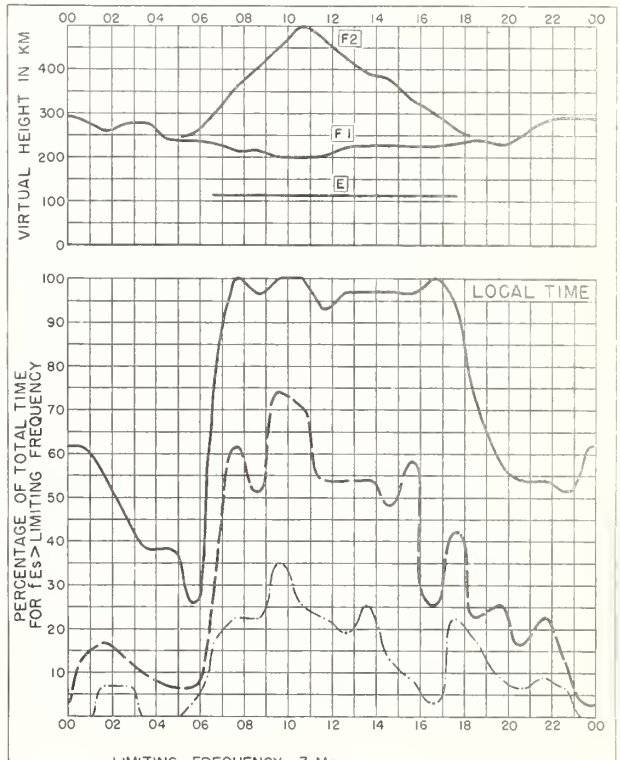


Fig. 24. MAUI, HAWAII JULY 1953

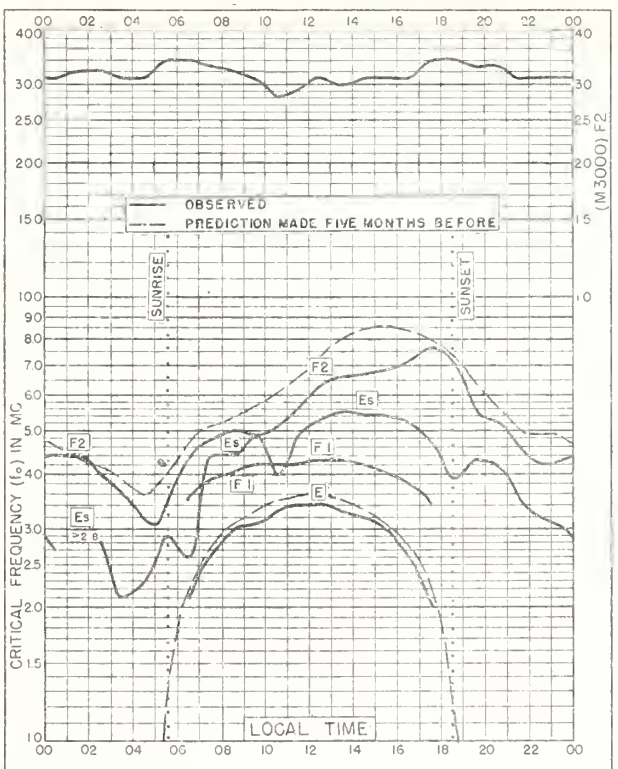


Fig. 25. PUERTO RICO, W.I.
18.5°N, 67.2°W JULY 1953

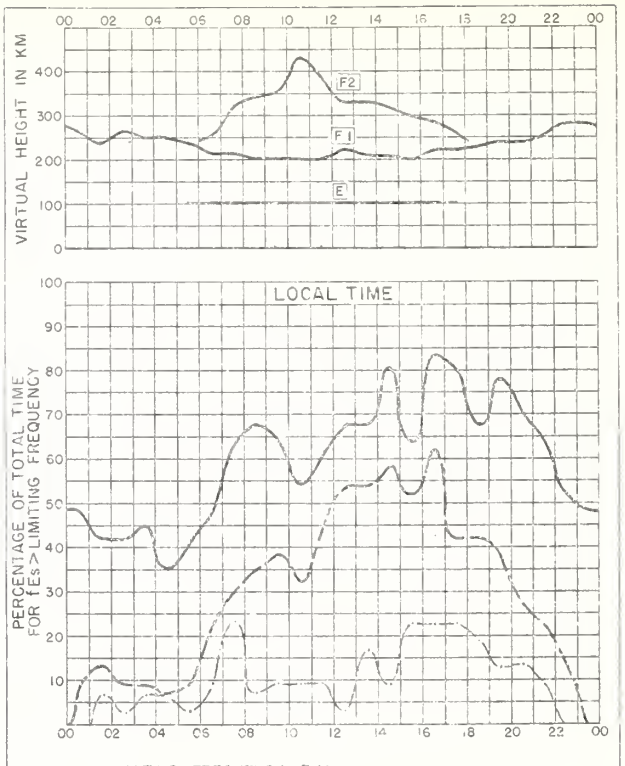


Fig. 26. PUERTO RICO, W.I. JULY 1953

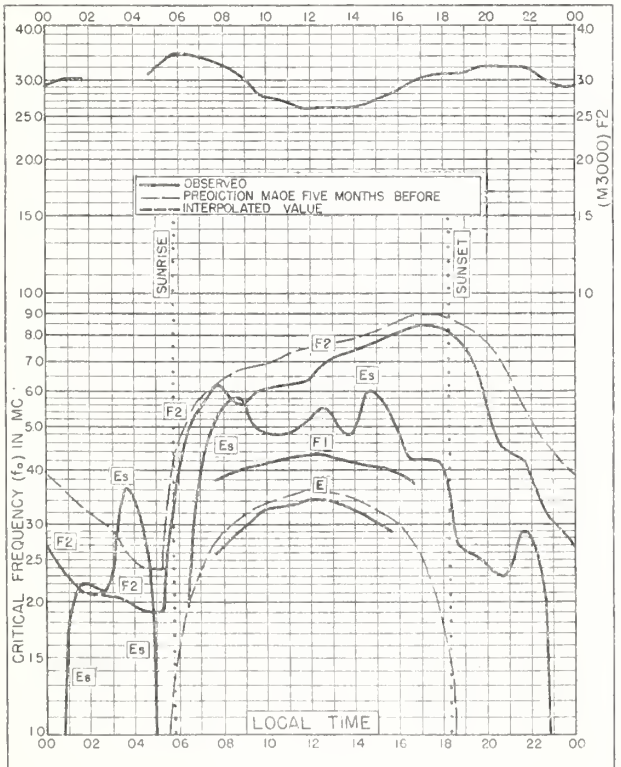


Fig 27. GUAM I.
13.6°N, 144.9°E JULY 1953

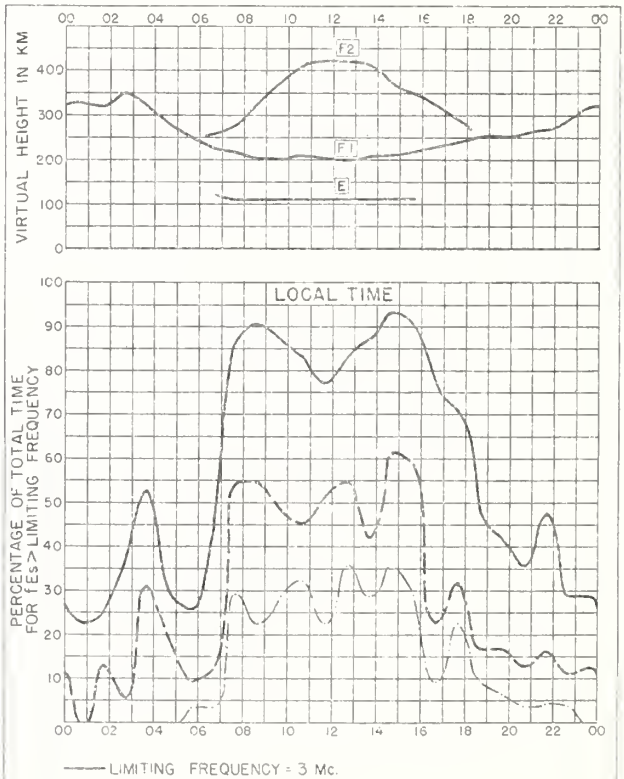


Fig. 28. GUAM I JULY 1953

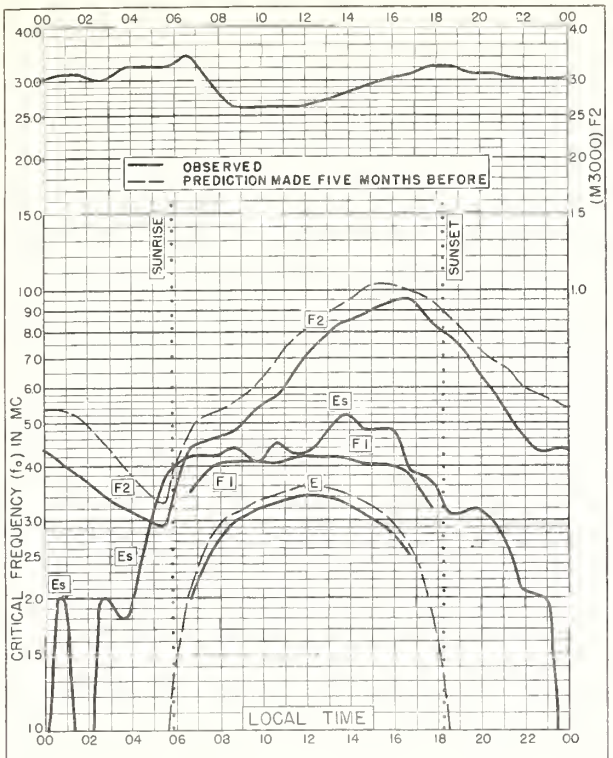


Fig. 29. PANAMA CANAL ZONE
9.4° N, 79.9° W JULY 1953

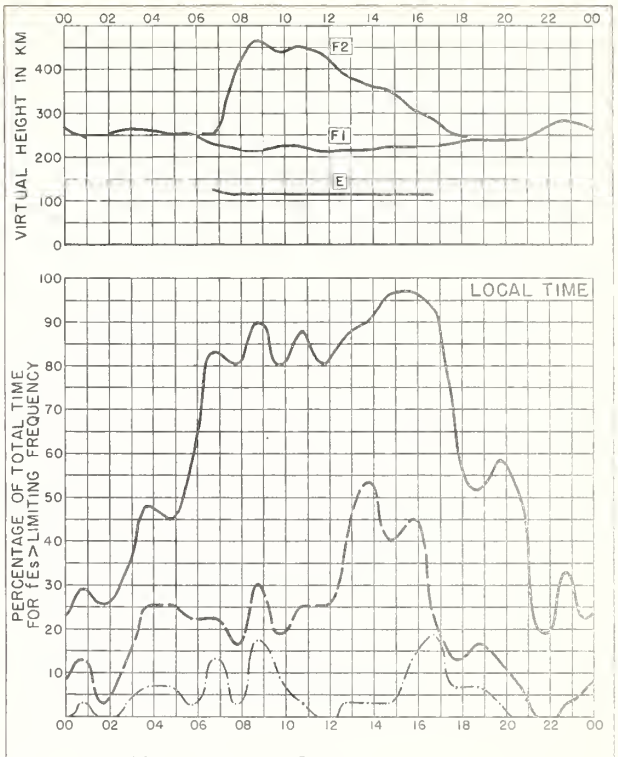


Fig. 30. PANAMA CANAL ZONE JULY 1953

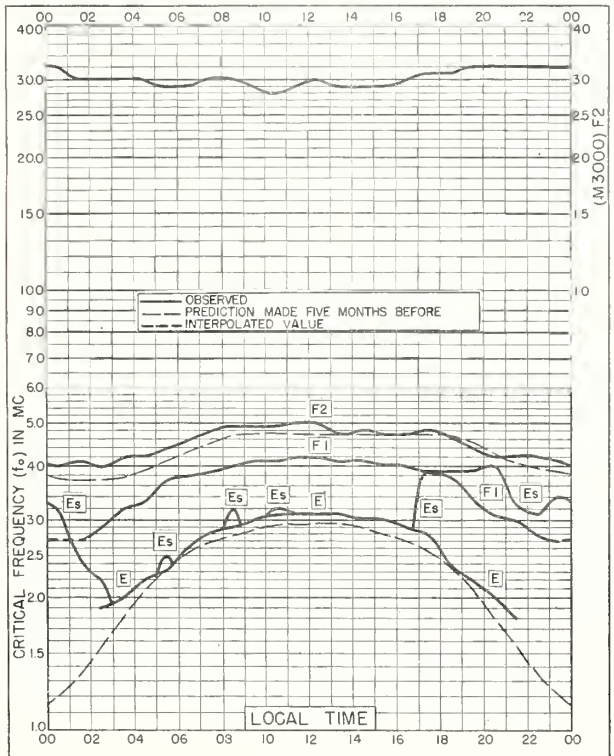


Fig. 31. KIRUNA, SWEDEN
67.8°N, 20.5°E JUNE 1953

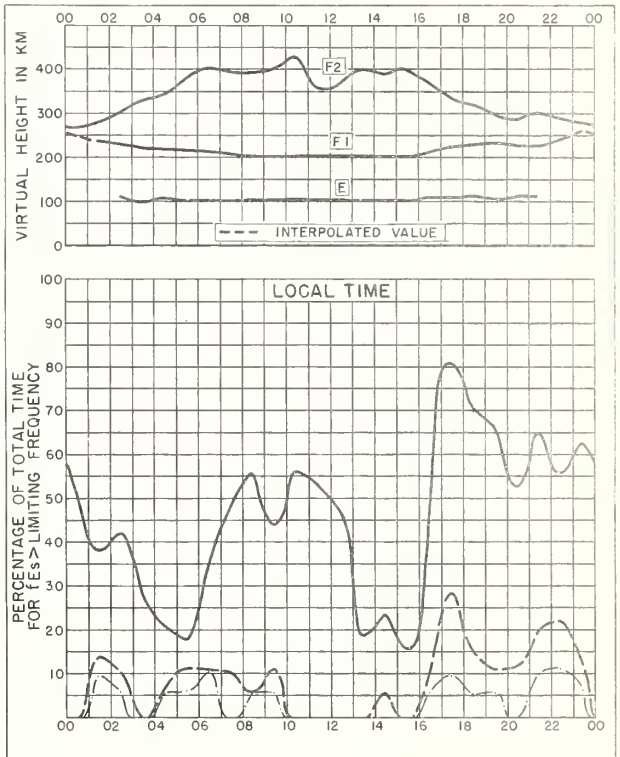


Fig. 32. KIRUNA, SWEDEN JUNE 1953

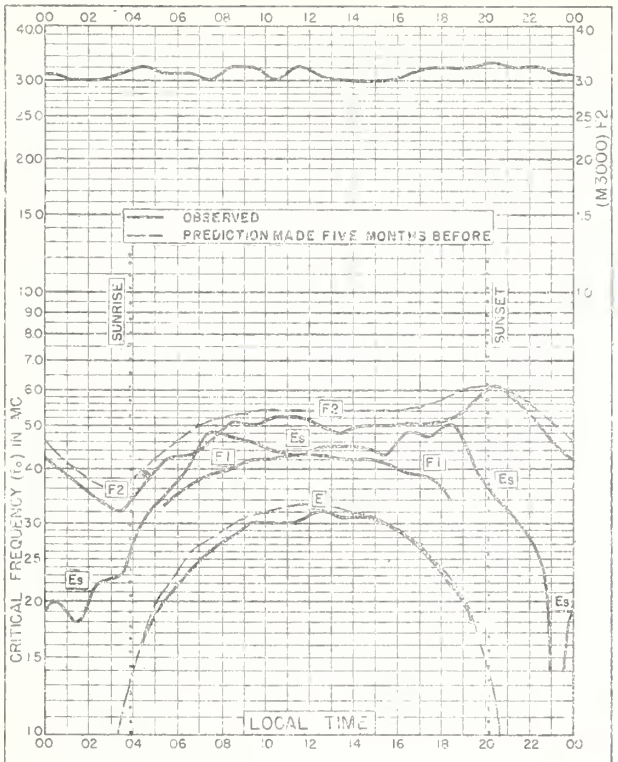


Fig. 33. De BILT, HOLLAND
52.1°N, 5.2°E JUNE 1953

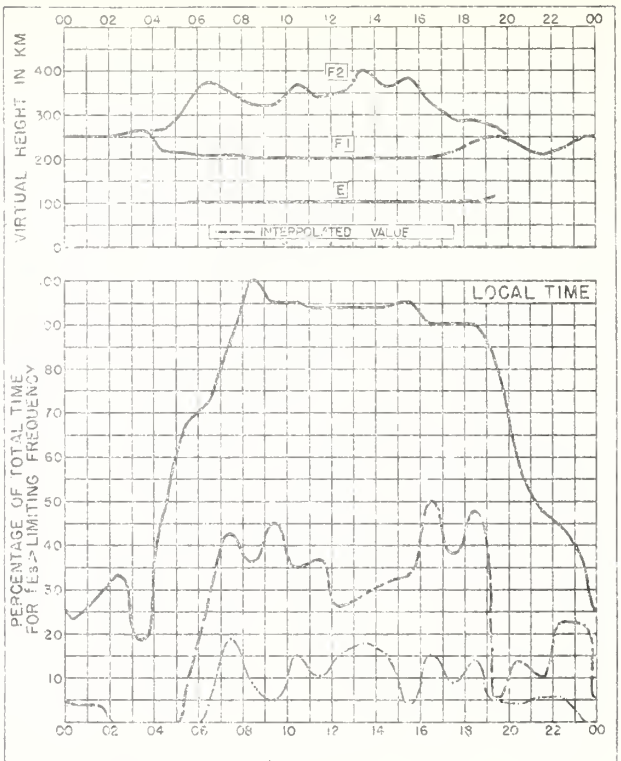


Fig. 34. De BILT, HOLLAND JUNE 1953

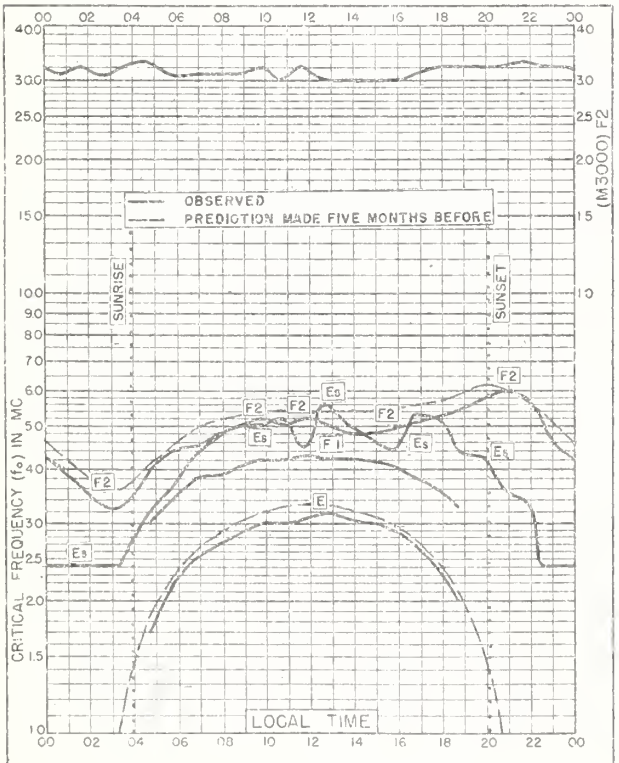


Fig. 35. LINDAU / HARZ, GERMANY
51.6°N, 10.1°E JUNE 1953

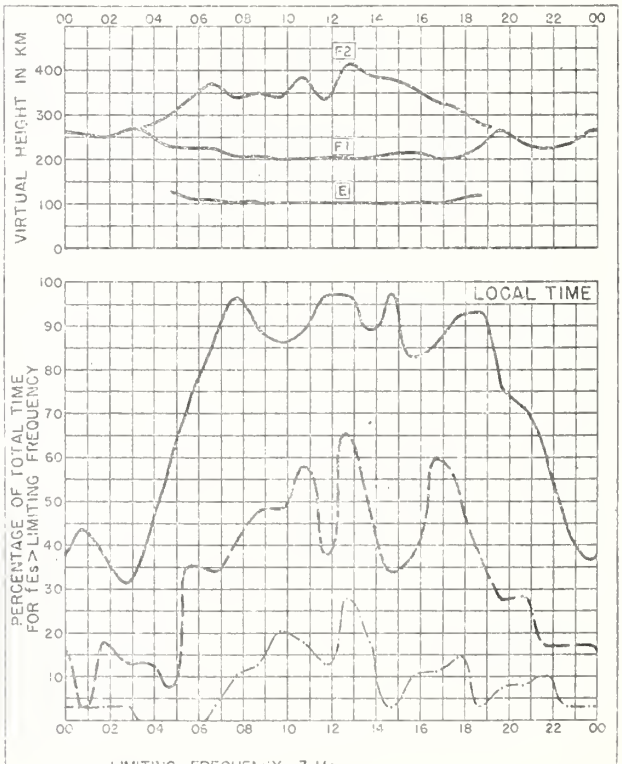


Fig. 36. LINDAU / HARZ, GERMANY JUNE 1953

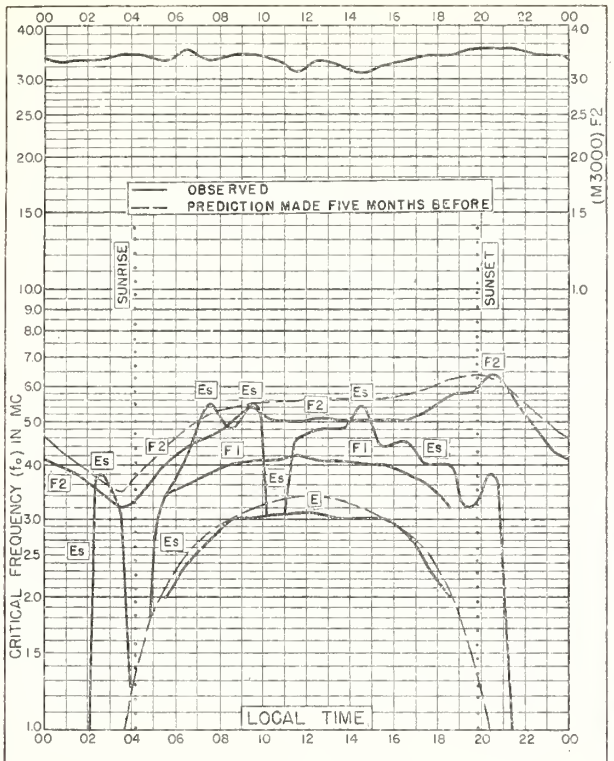


Fig. 37. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E JUNE 1953

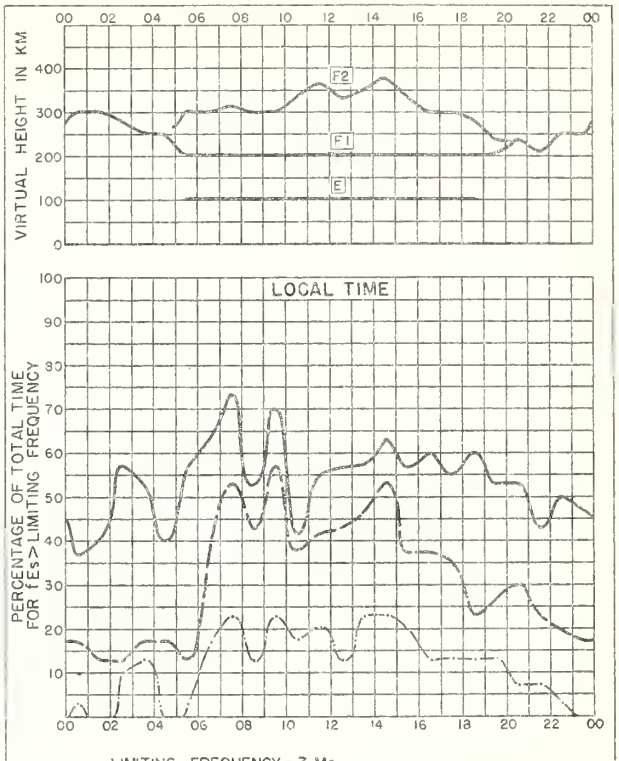


Fig. 38. SCHWARZENBURG, SWITZERLAND JUNE 1953

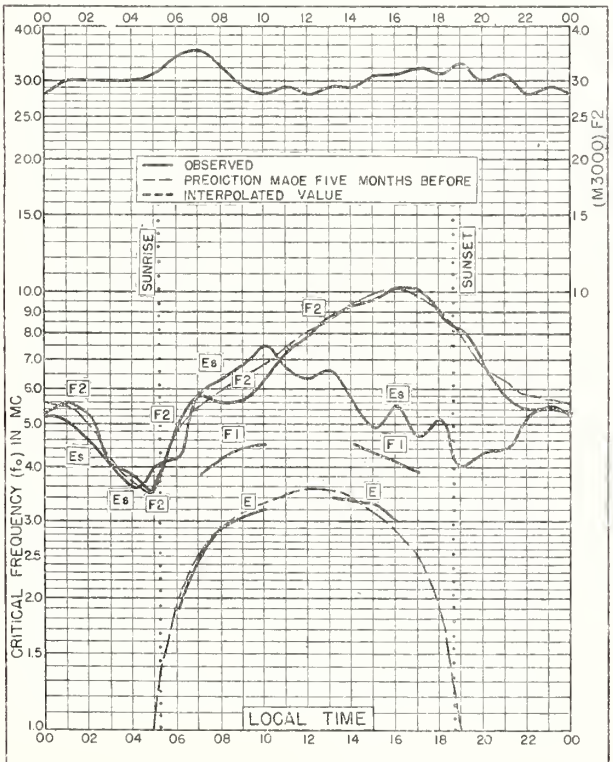


Fig. 39. FORMOSA, CHINA
25.0° N, 121.5° E JUNE 1953

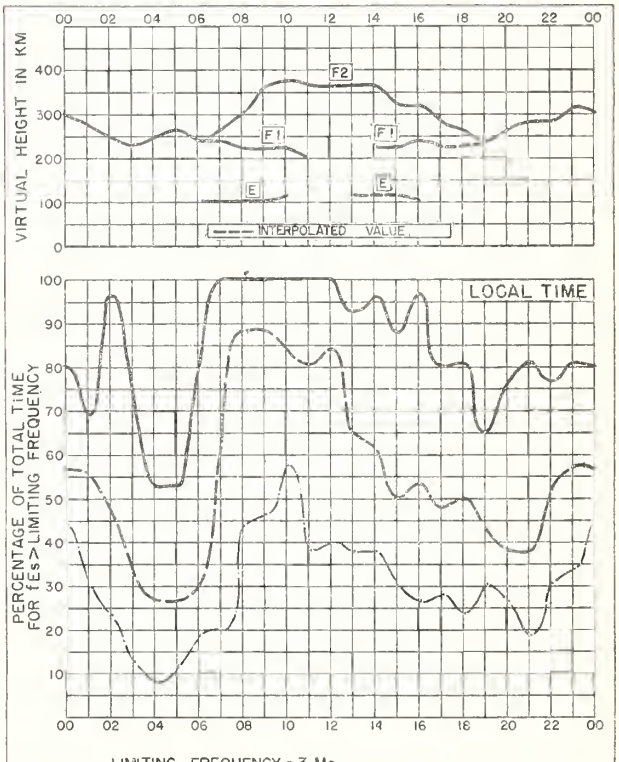


Fig. 40. FORMOSA, CHINA JUNE 1953

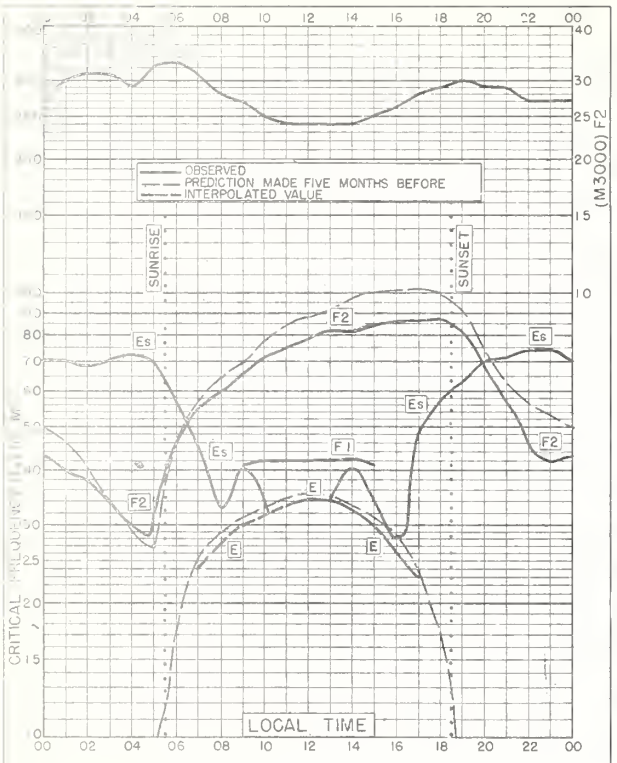


Fig. 41. BAGUIO, P. I.
16.4° N, 120.6° E JUNE 1953

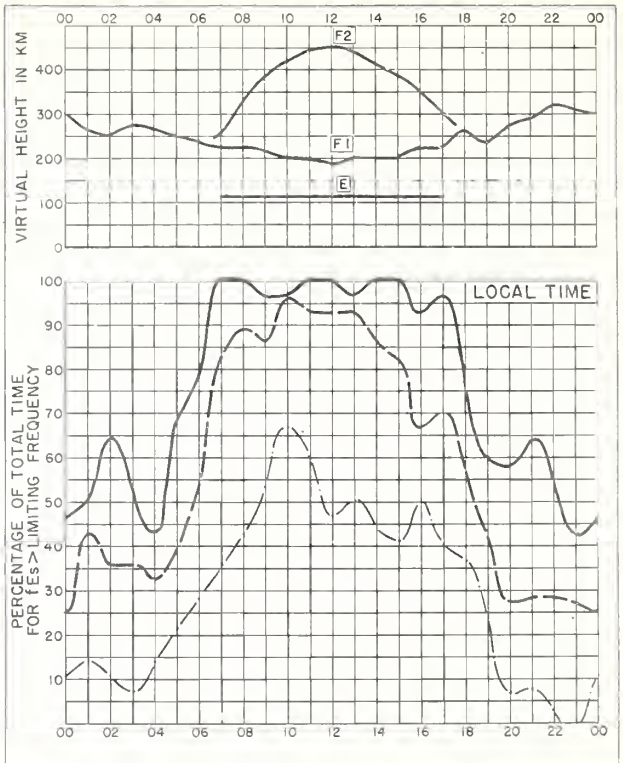


Fig. 42. BAGUIO, P. I. JUNE 1953

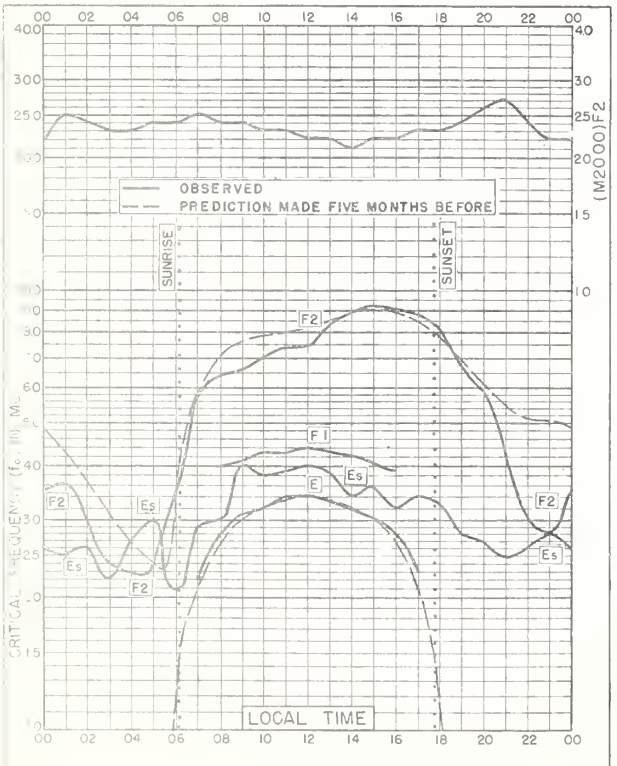


Fig. 43. LEOPOLDVILLE, BELGIAN CONGO
4.3° S, 15.3° E JUNE 1953

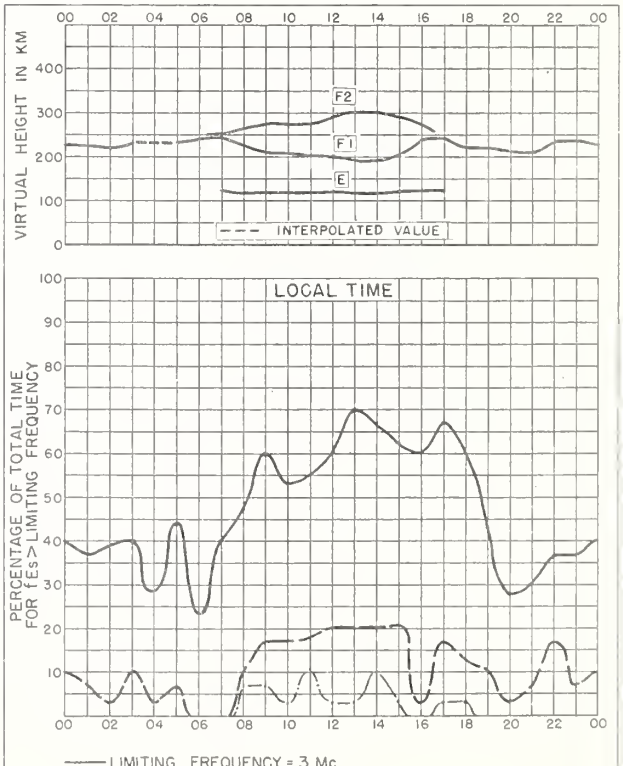


Fig. 44. LEOPOLDVILLE, BELGIAN CONGO JUNE 1953

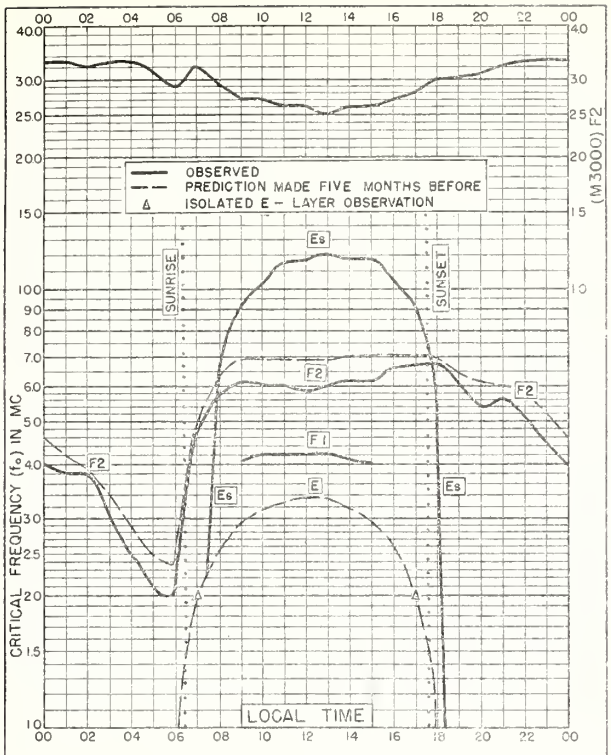


Fig. 45. HUANCAYO, PERU
12.0°S, 75.3°W JUNE 1953

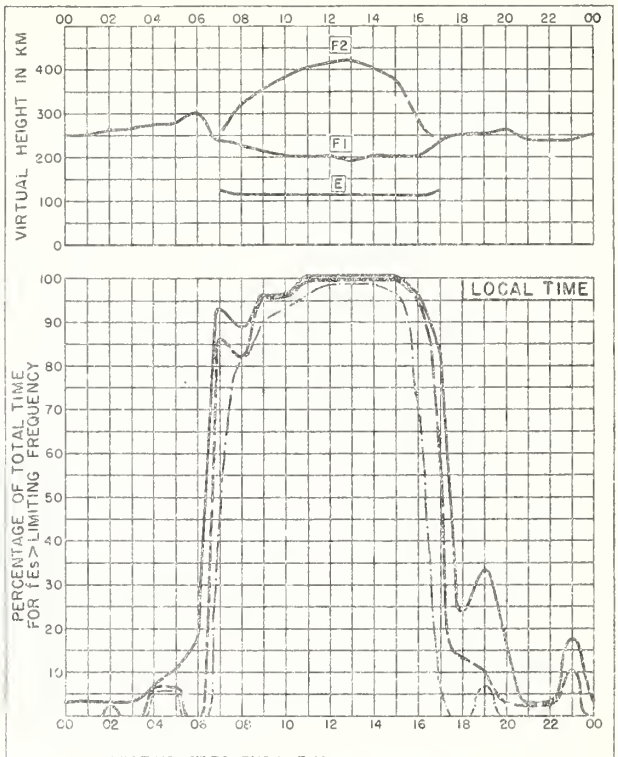


Fig. 46. HUANCAYO, PERU JUNE 1953

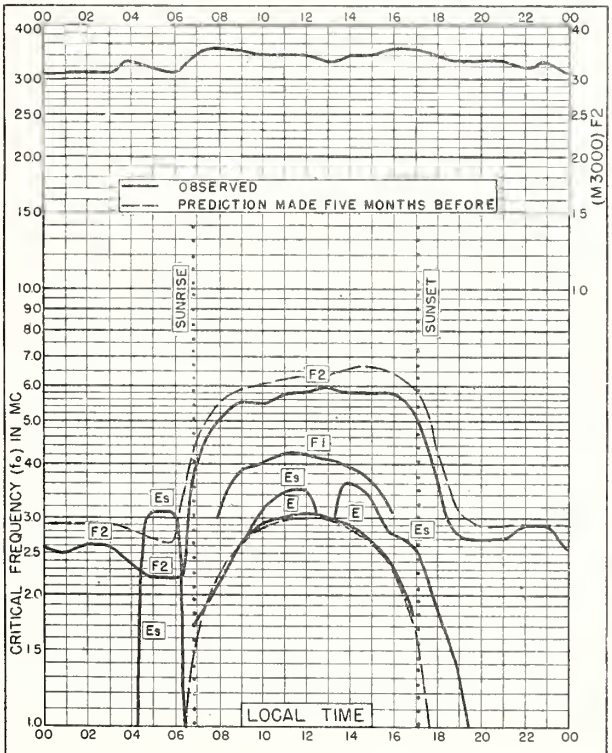


Fig. 47. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E JUNE 1953

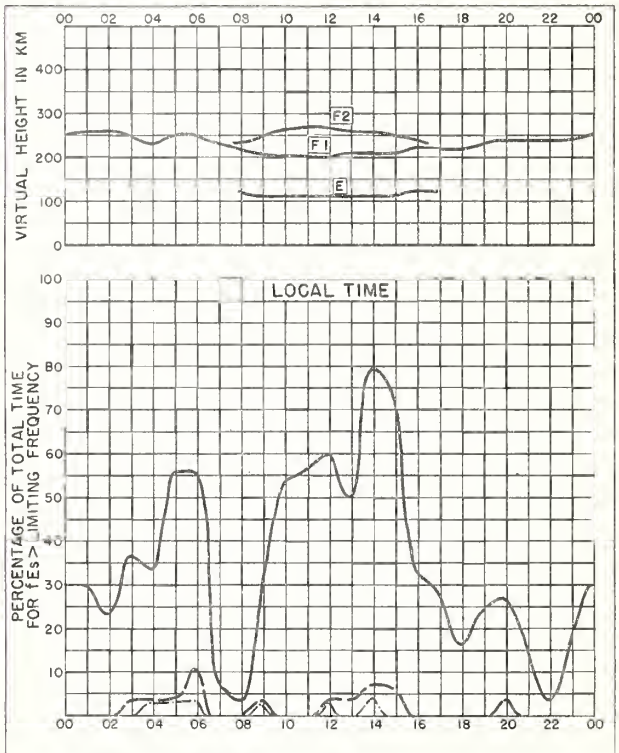


Fig. 48. JOHANNESBURG, UNION OF S. AFRICA JUNE 1953

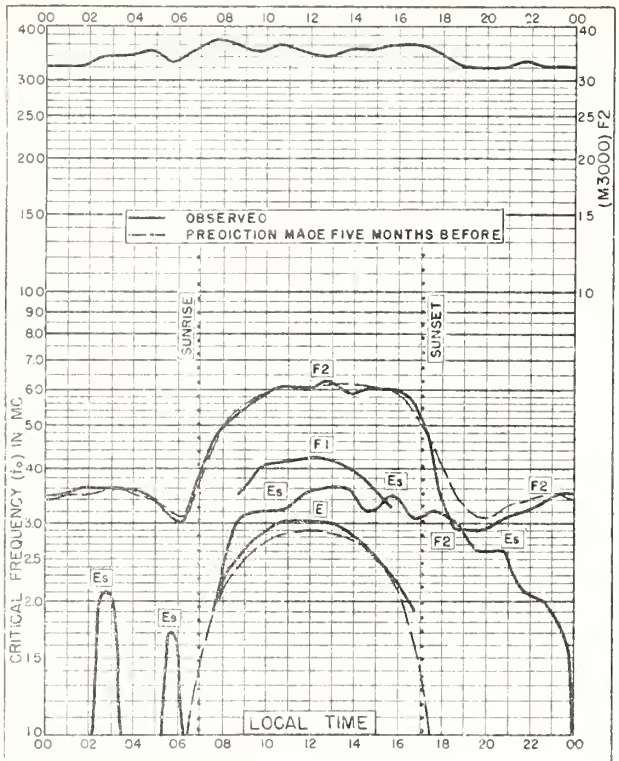


Fig. 49. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E JUNE 1953

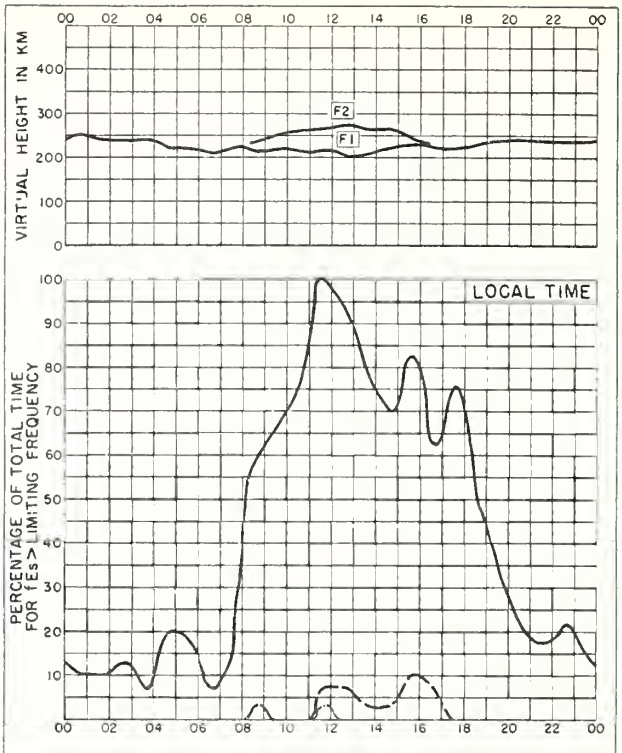


Fig. 50. WATHEROO, W. AUSTRALIA JUNE 1953

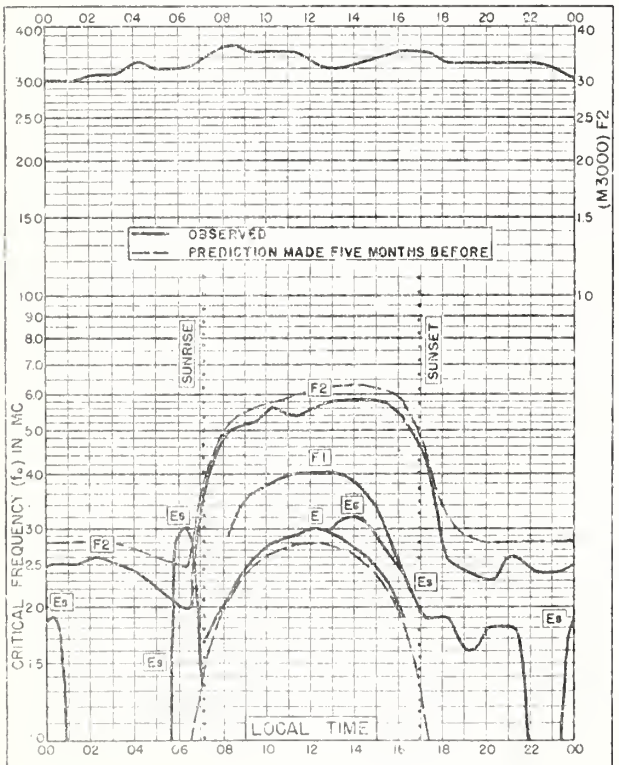


Fig. 51. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E JUNE 1953

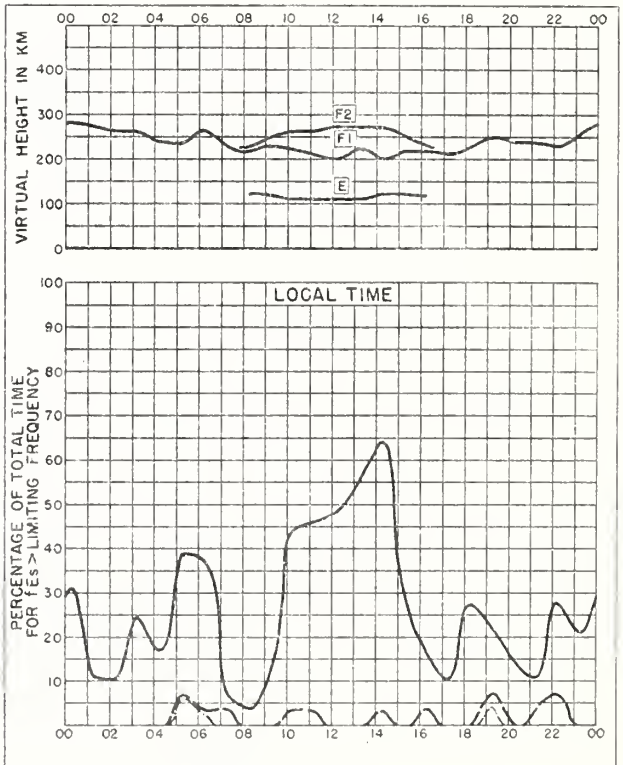


Fig. 52. CAPETOWN, UNION OF S. AFRICA JUNE 1953

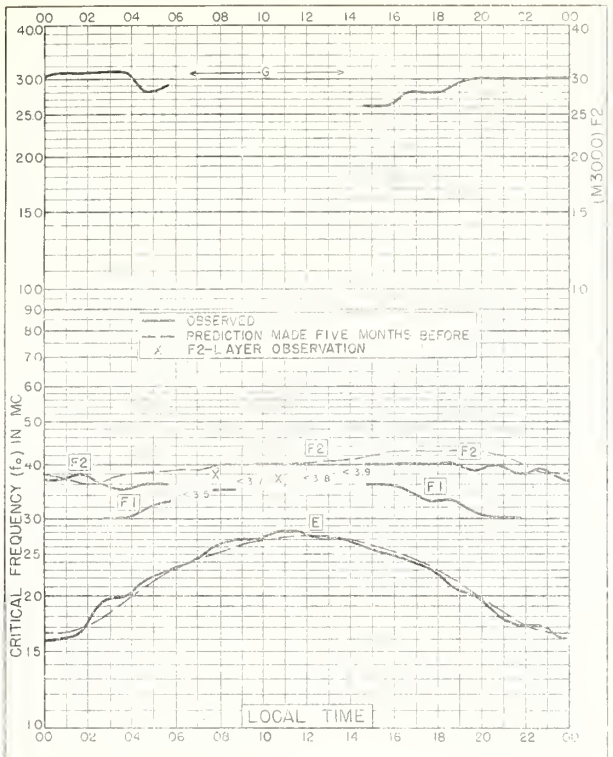


Fig. 53. RESOLUTE BAY, CANADA
74.7°N, 94.9° W MAY 1953

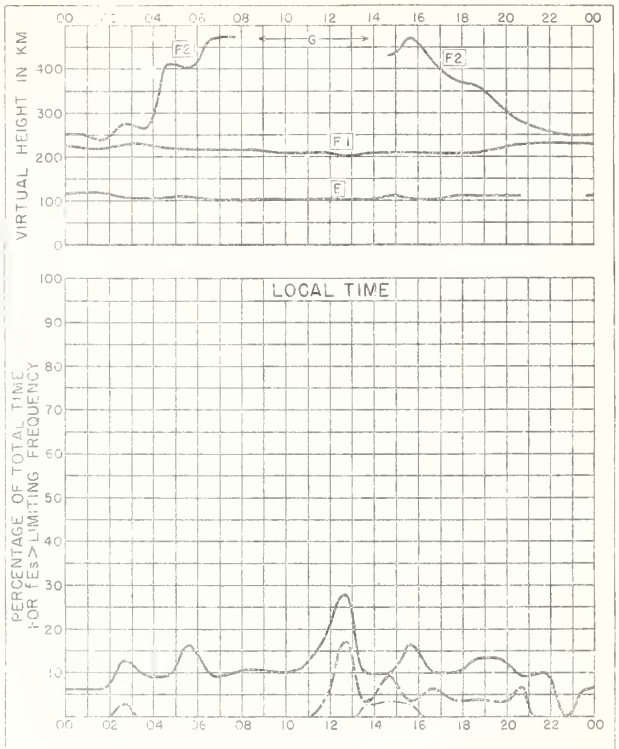


Fig. 54. RESOLUTE BAY, CANADA MAY 1953

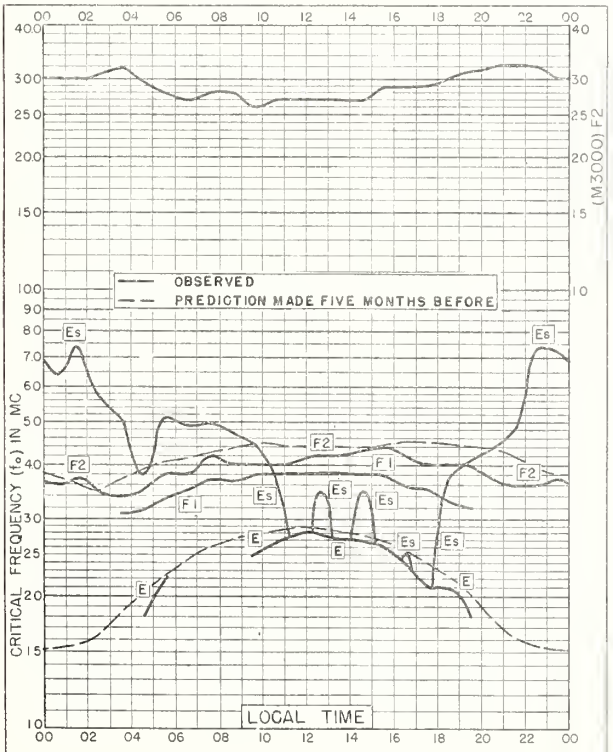


Fig. 55. POINT BARROW, ALASKA
71.3°N, 156.8°W MAY 1953

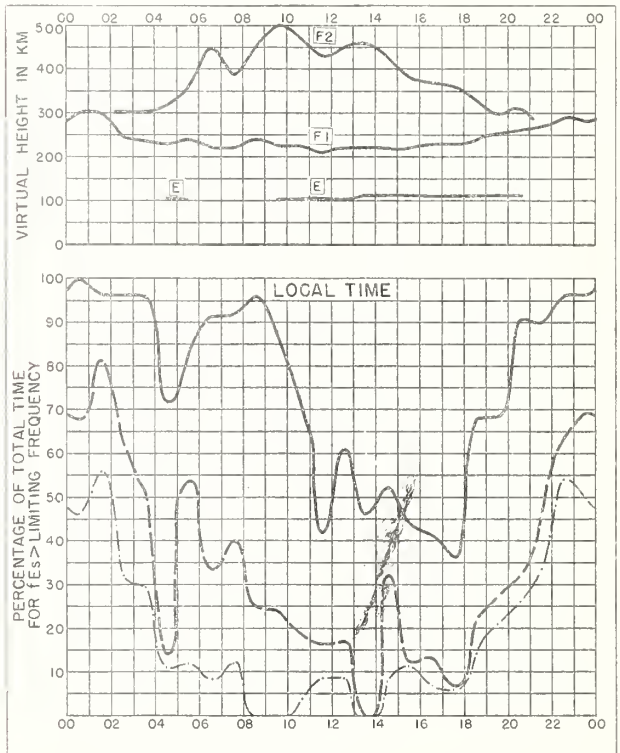


Fig. 56. POINT BARROW, ALASKA MAY 1953

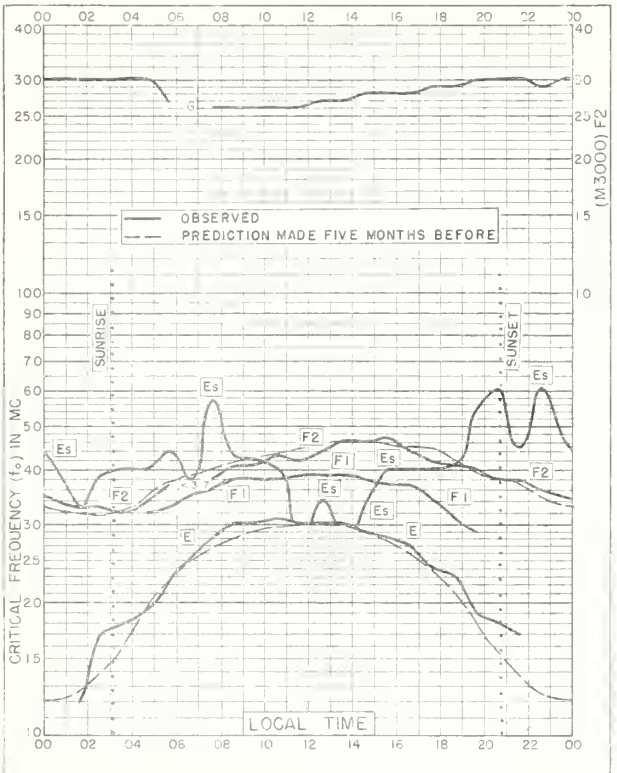


Fig 57. BAKER LAKE, CANADA
64.3° N, 96.0° W
MAY 1953

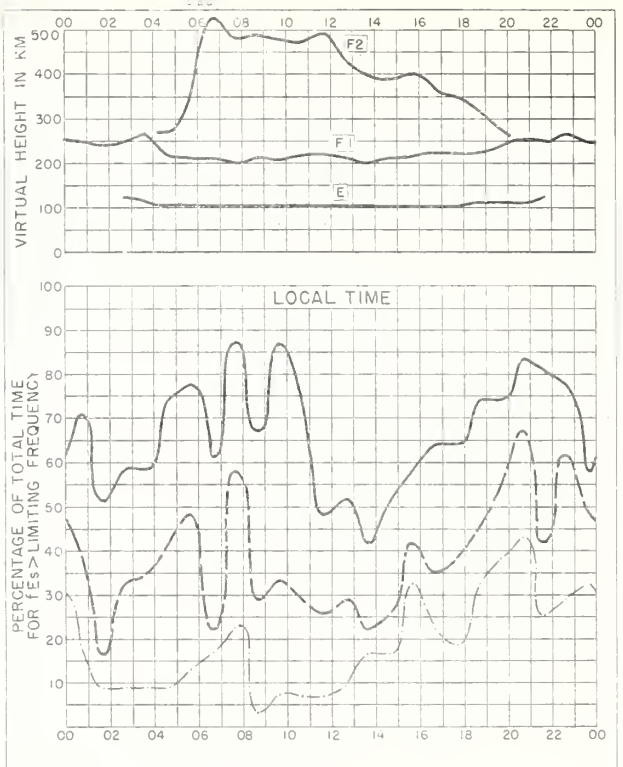


Fig 58. BAKER LAKE, CANADA
MAY 1953

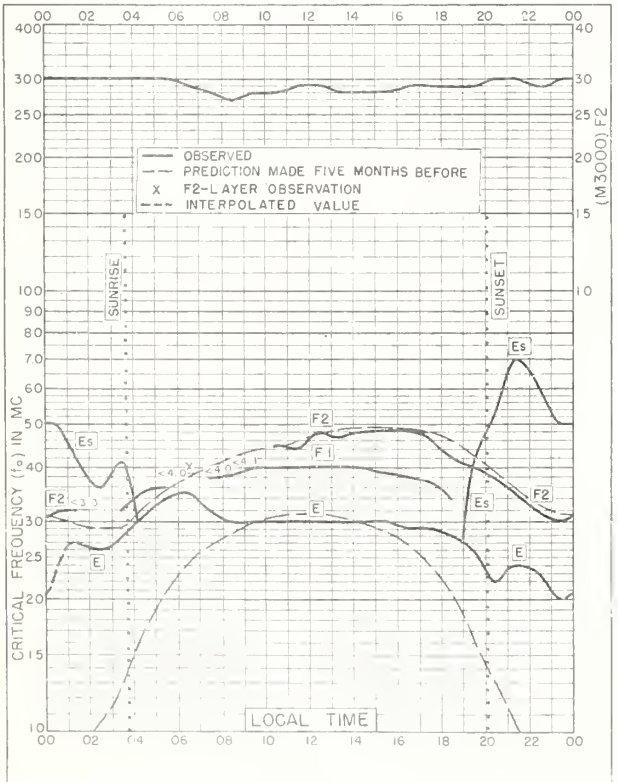


Fig 59. FORT CHIMO, CANADA
58.1° N, 68.3° W
MAY 1953

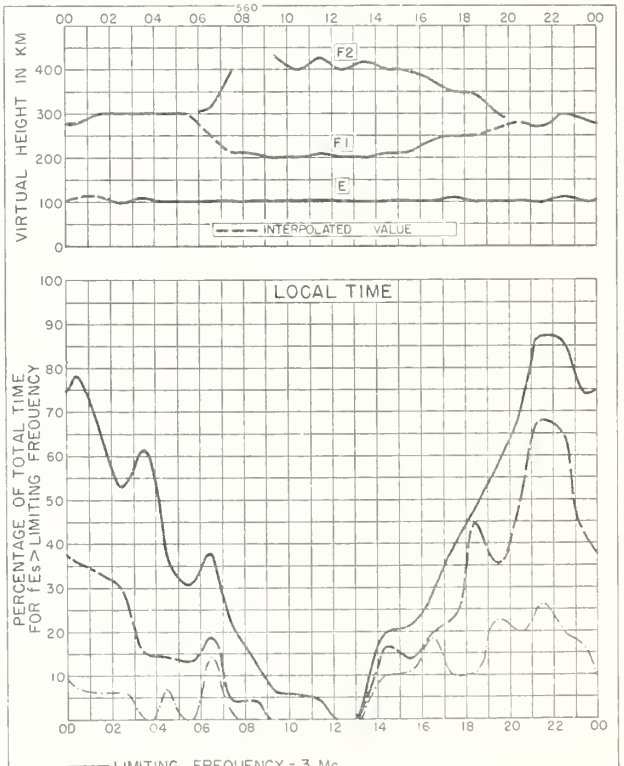


Fig. 60. FORT CHIMO, CANADA
MAY 1953

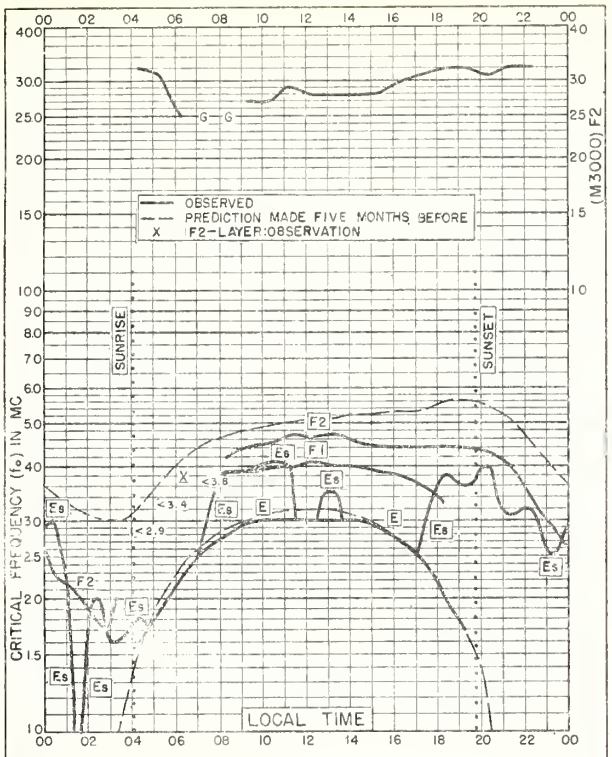


Fig. 61. PRINCE RUPERT, CANADA
54.3°N, 130.3°W MAY 1953

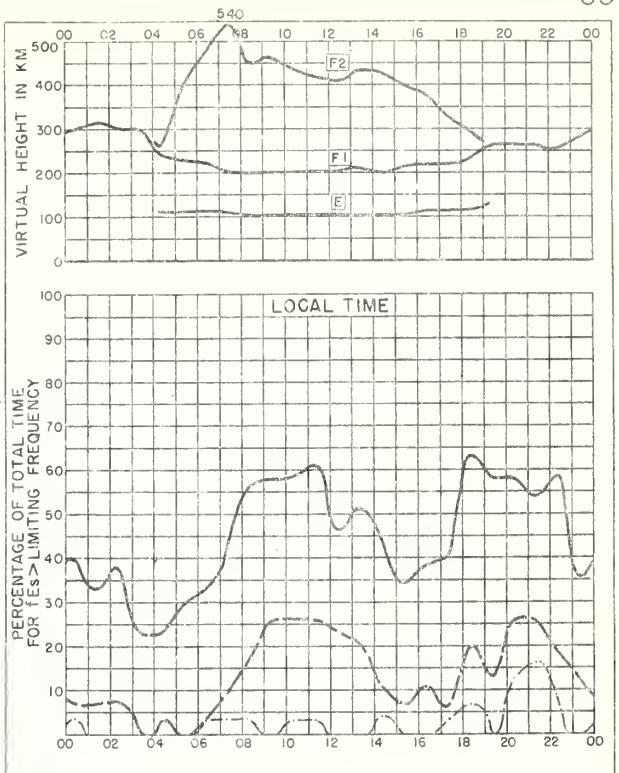


Fig. 62. PRINCE RUPERT, CANADA MAY 1953

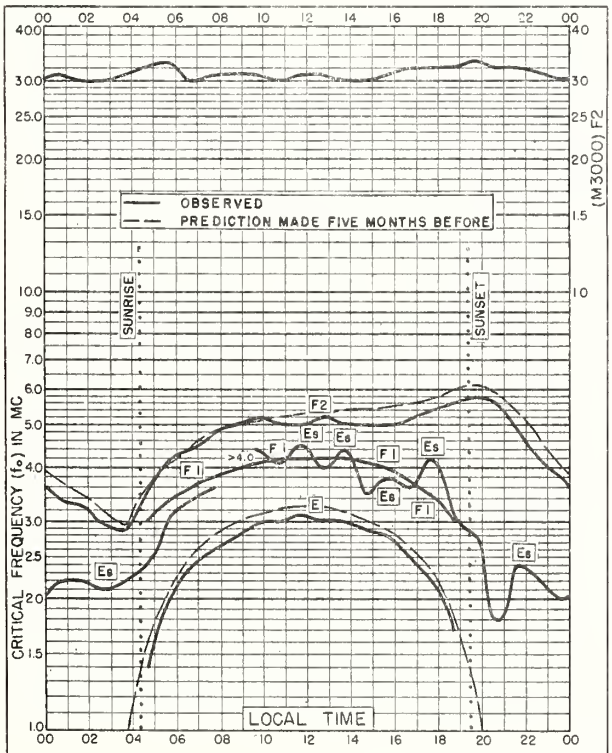


Fig. 63. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E MAY 1953

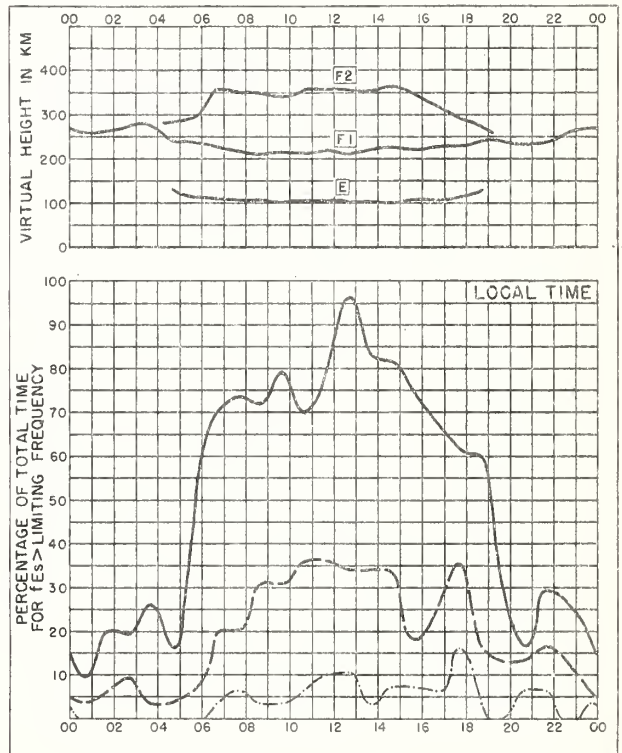


Fig. 64. LINDAU/HARZ, GERMANY MAY 1953

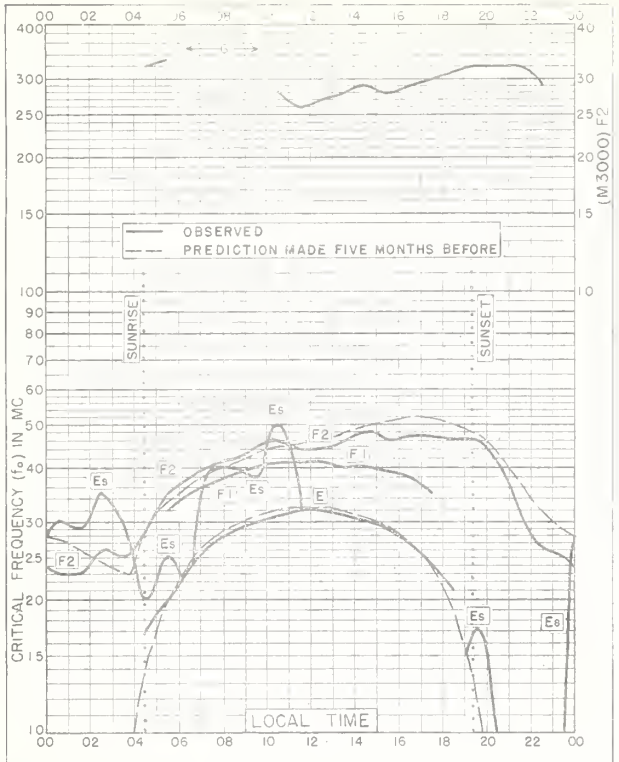


Fig. 65. WINNIPEG, CANADA
49.9° N, 97.4° W MAY 1953

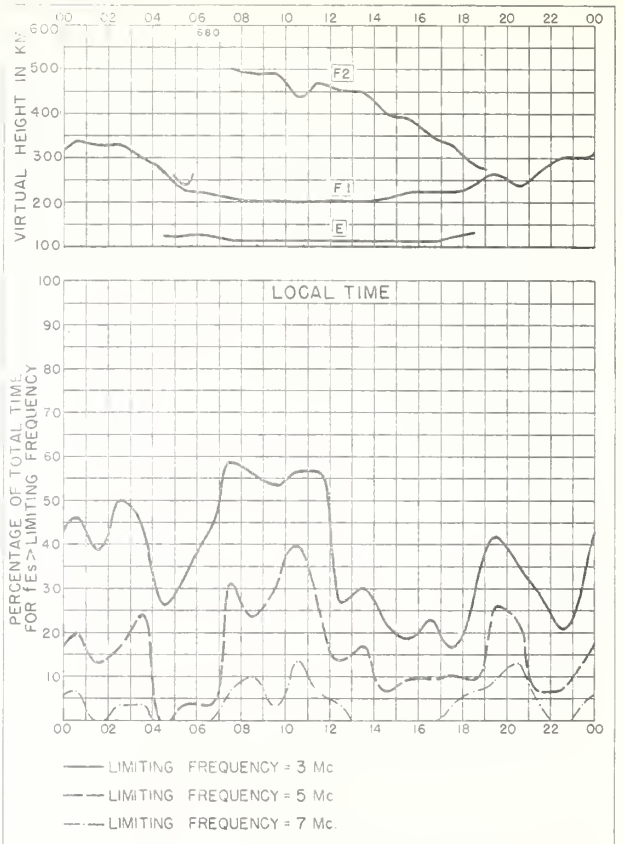


Fig. 66. WINNIPEG, CANADA MAY 1953

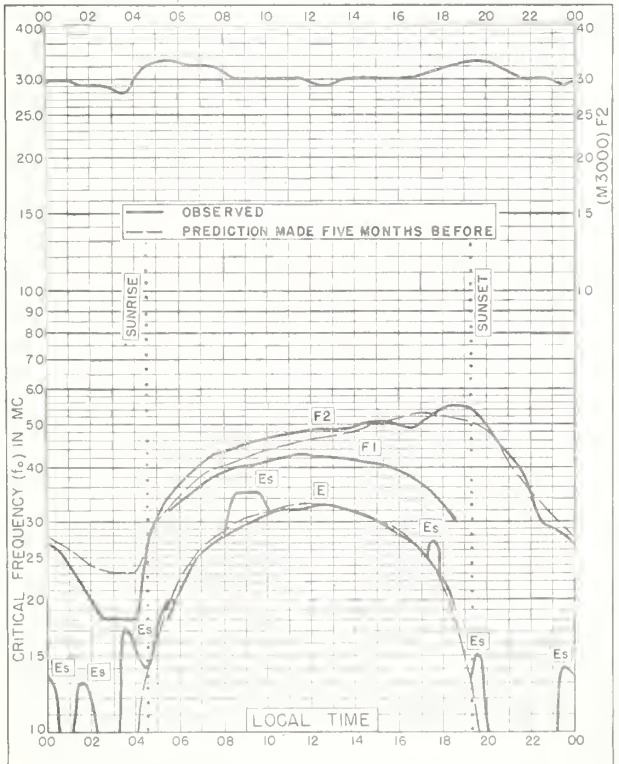


Fig. 67. ST JOHN'S, NEWFOUNDLAND
47.6° N, 52.7° W MAY 1953

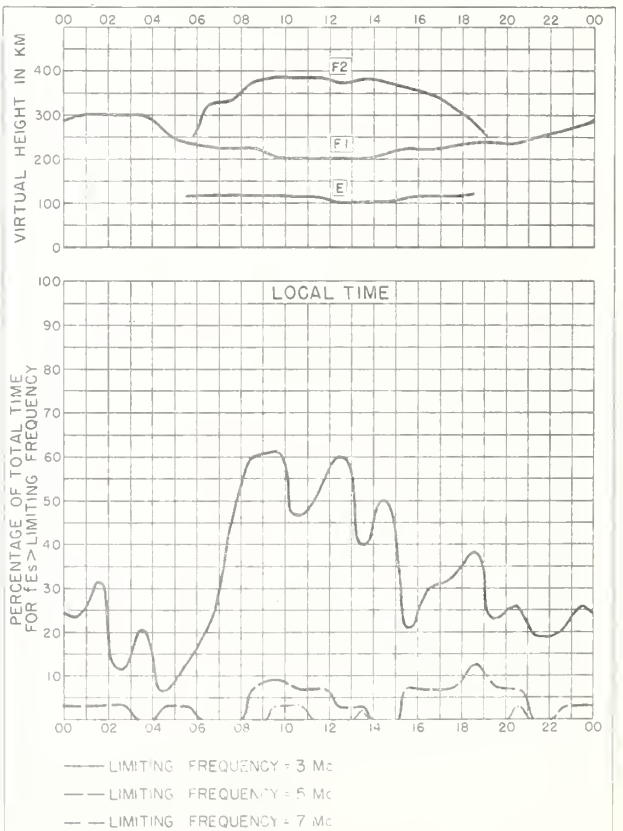


Fig. 68. ST JOHN'S, NEWFOUNDLAND MAY 1953

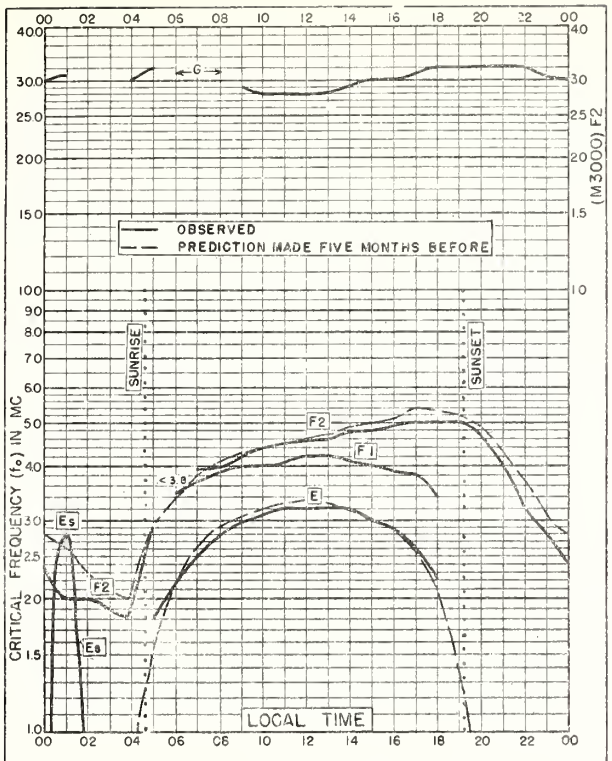


Fig. 69. OTTAWA, CANADA
45.4° N, 75.7° W
MAY 1953

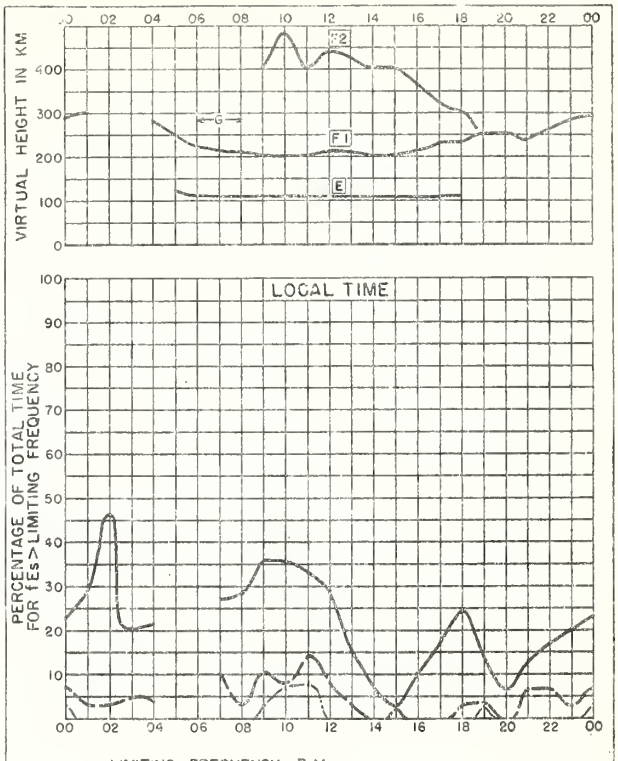


Fig. 70. OTTAWA, CANADA
MAY 1953

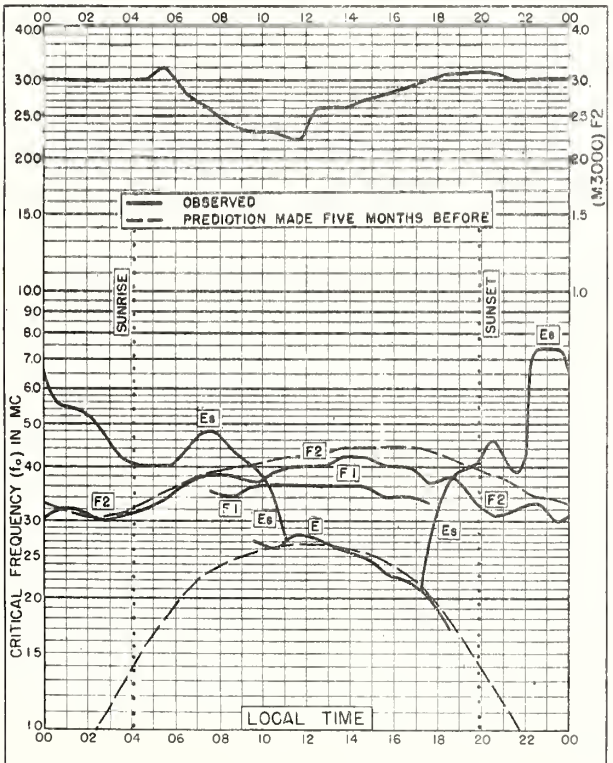


Fig. 71. POINT BARROW, ALASKA
71.3° N, 156.8° W
APRIL 1953

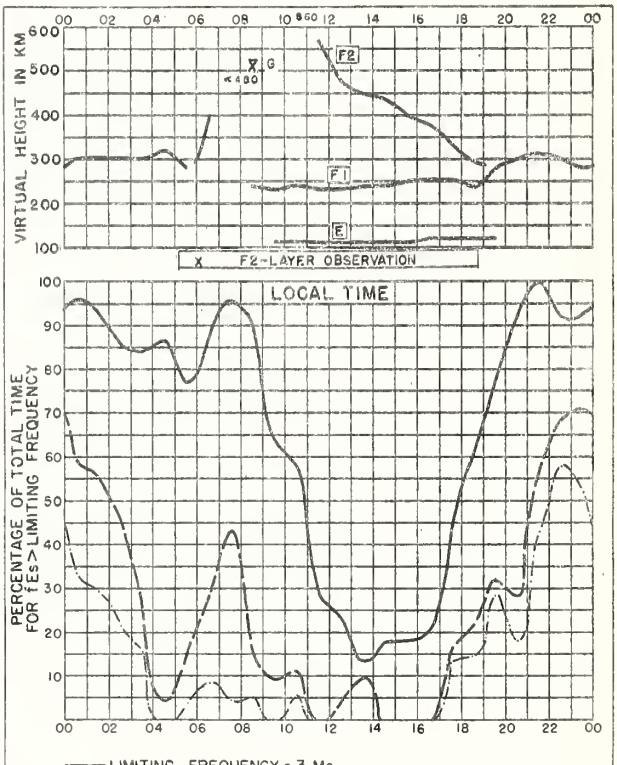


Fig. 72. POINT BARROW, ALASKA
APRIL 1953

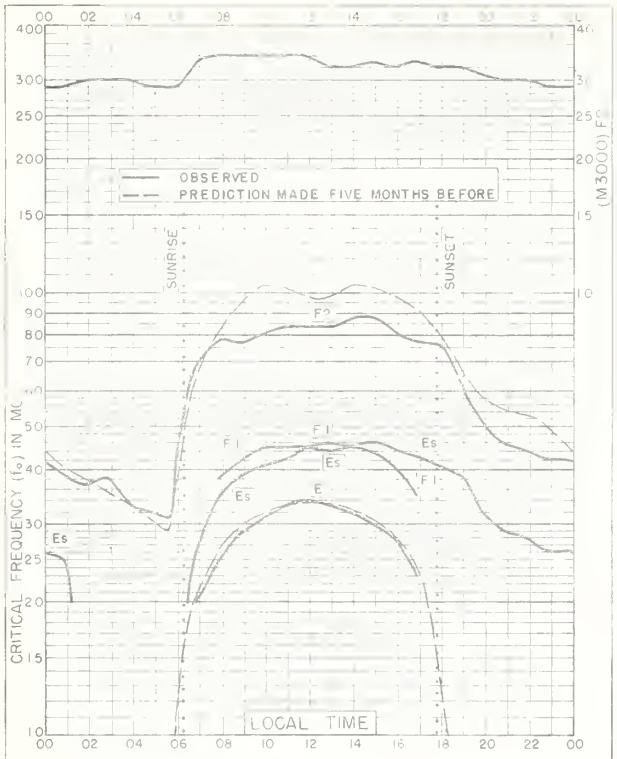


Fig. 73. RAROTONGA I.
21.3° S, 159.8° W APRIL 1953

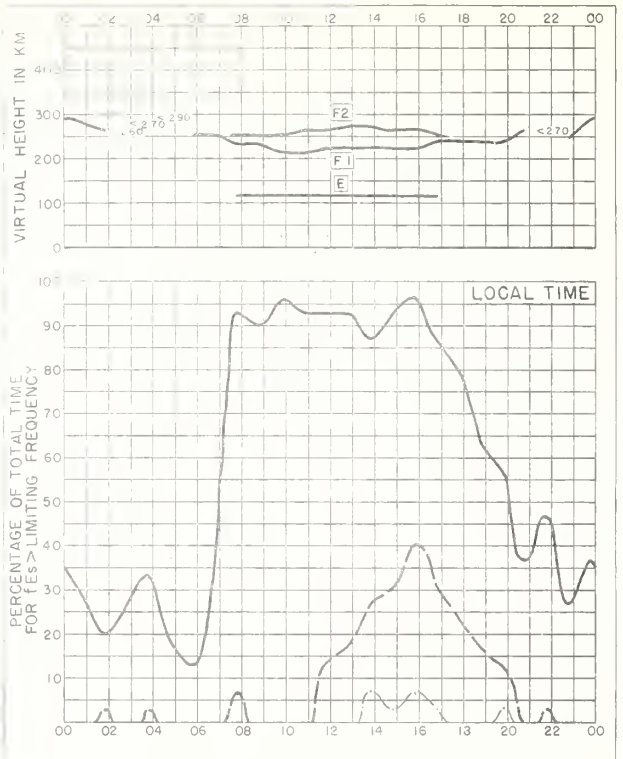


Fig. 74. RAROTONGA I. APRIL 1953

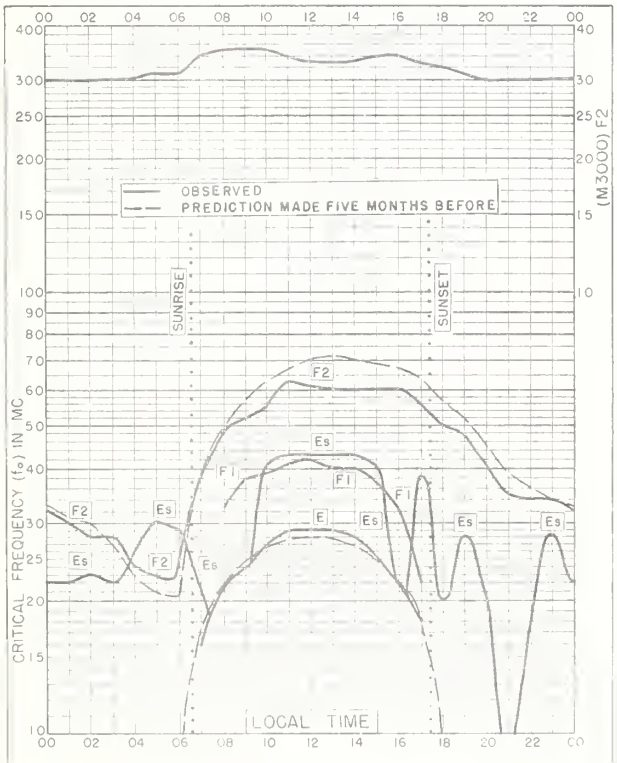


Fig. 75. CHRISTCHURCH, NEW ZEALAND
43.6° S, 172.7° E APRIL 1953

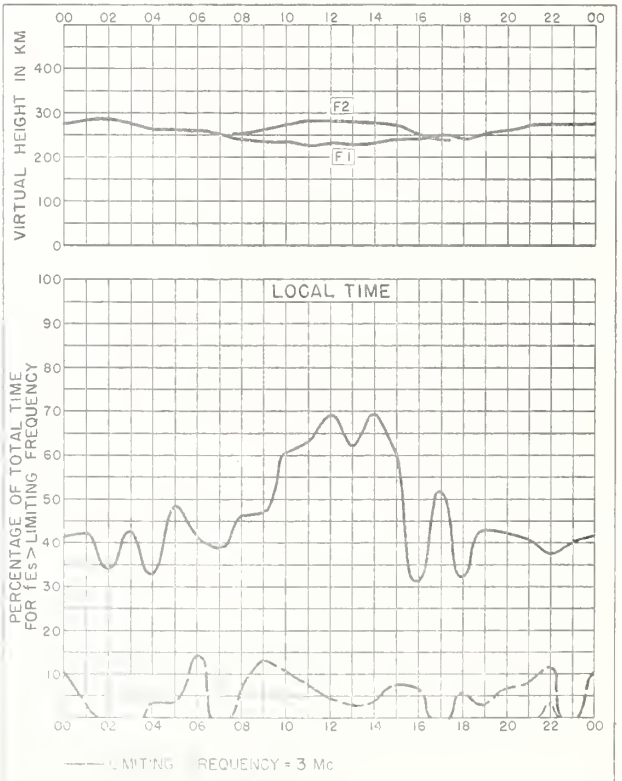


Fig. 76. CHRISTCHURCH, NEW ZEALAND APRIL 1953

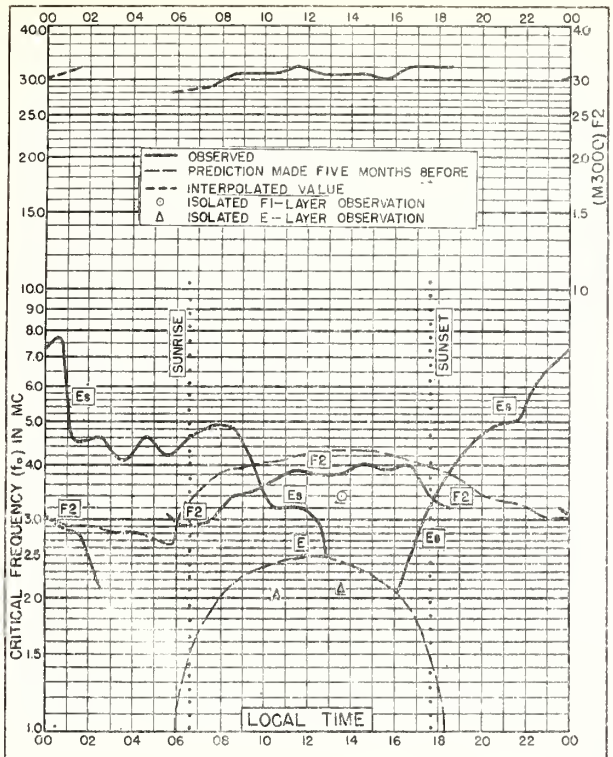


Fig. 77. POINT BARROW, ALASKA
71.3°N, 156.8° W MARCH 1953

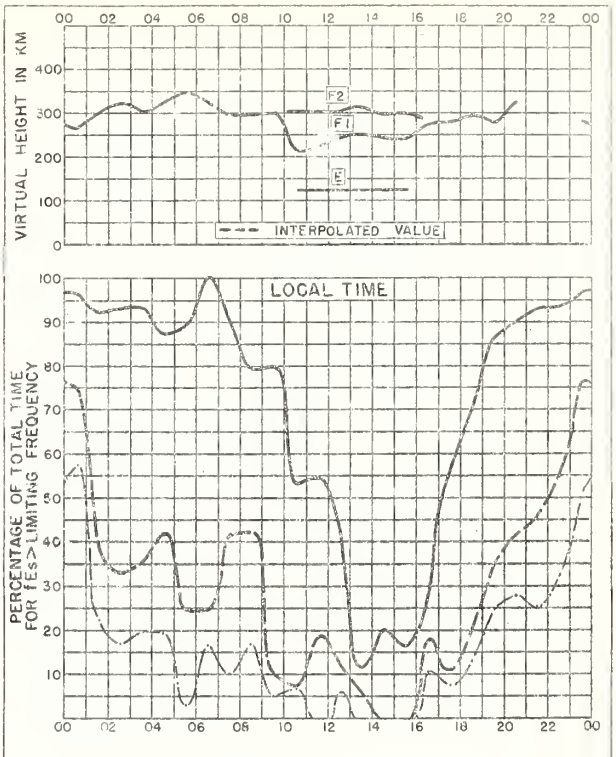


Fig. 78. POINT BARROW, ALASKA MARCH 1953

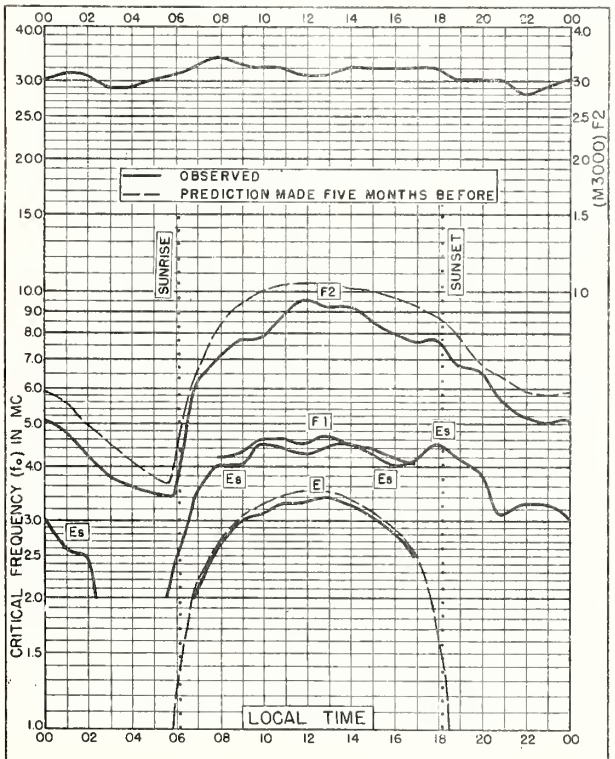


Fig. 79. RAROTONGA I.
21.3° S, 159.8° W MARCH 1953

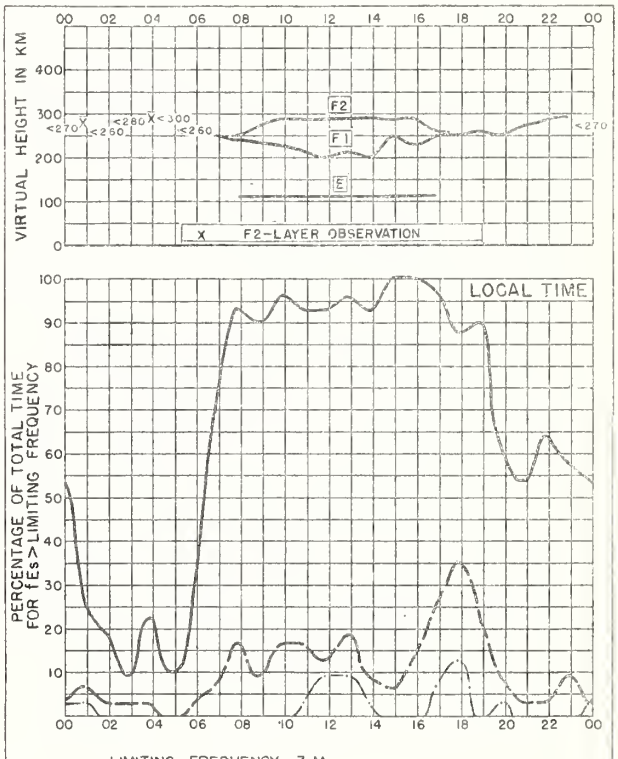


Fig. 80. RAROTONGA I MARCH 1953

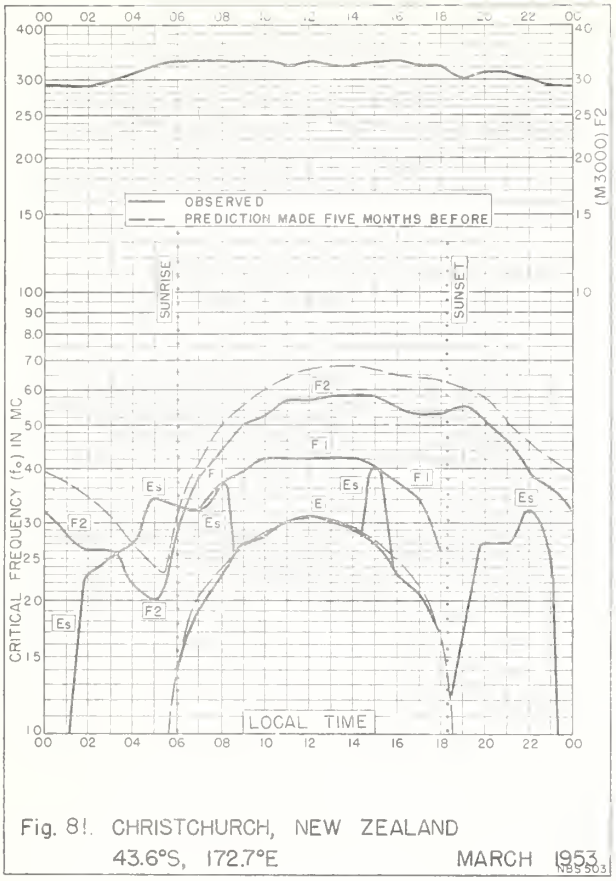


Fig. 81. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.7°E MARCH 1953

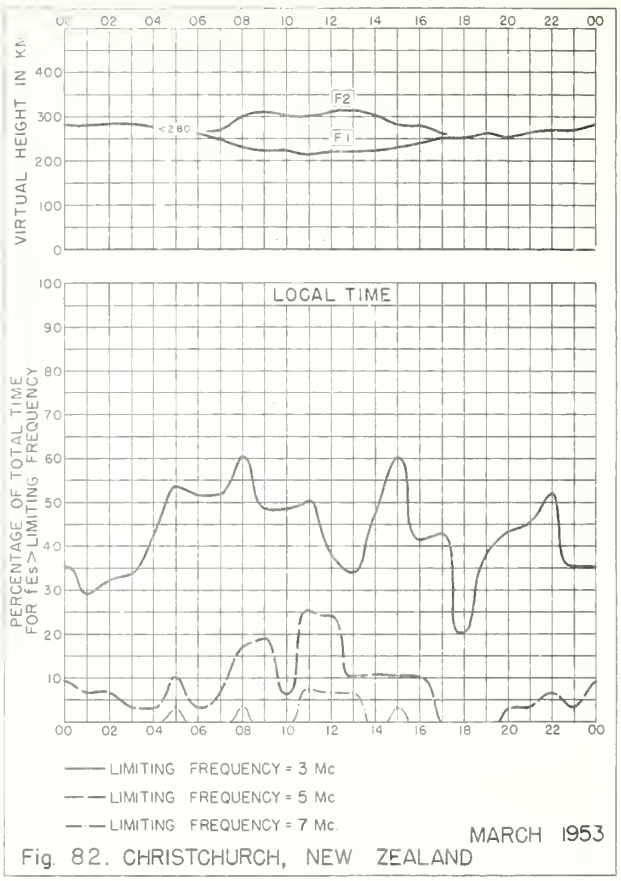


Fig. 82. CHRISTCHURCH, NEW ZEALAND MARCH 1953

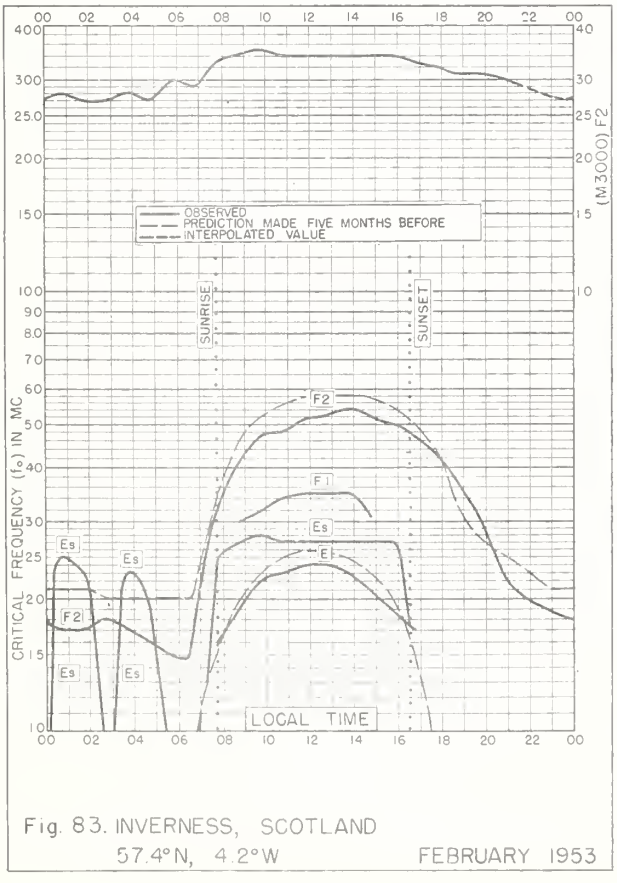


Fig. 83. INVERNESS, SCOTLAND
57.4°N, 4.2°W FEBRUARY 1953

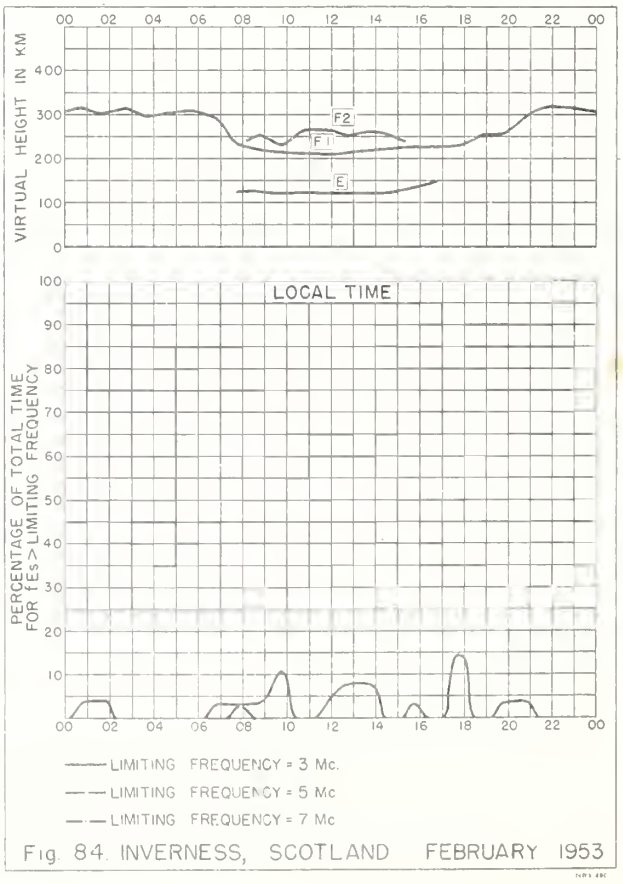


Fig. 84. INVERNESS, SCOTLAND FEBRUARY 1953

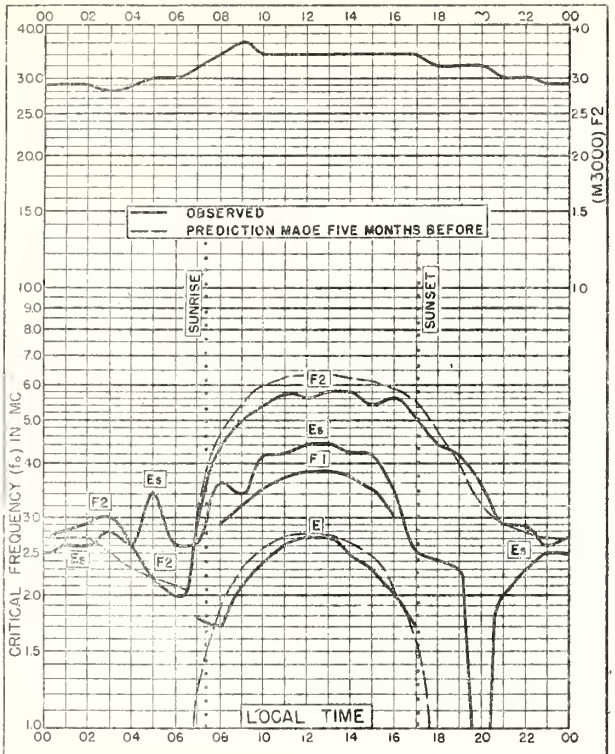


Fig. 85. SLOUGH, ENGLAND
51.5°N, 0.6°W FEBRUARY 1953

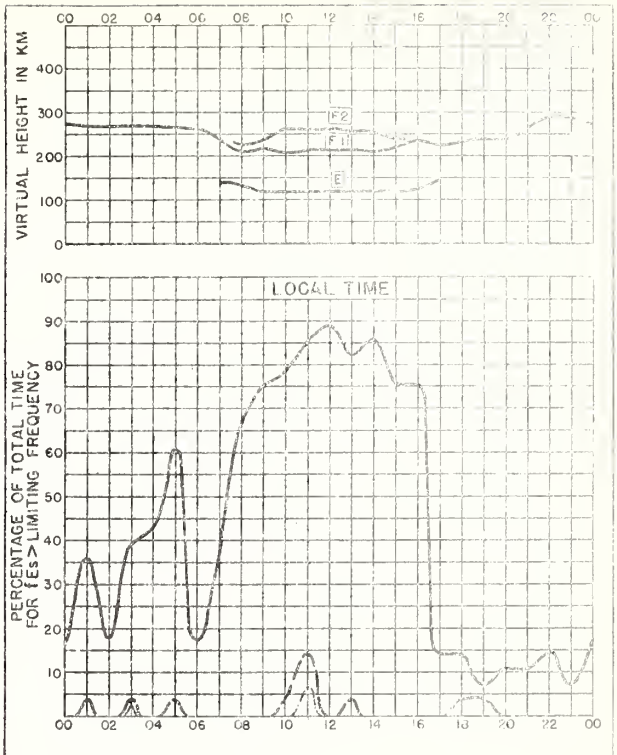


Fig. 86. SLOUGH, ENGLAND FEBRUARY 1953

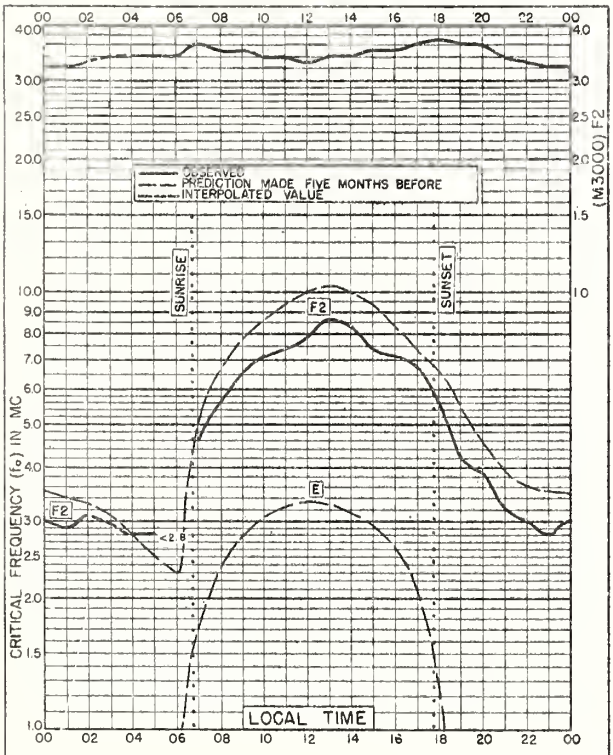


Fig. 87. DELHI, INDIA
28.6°N, 77.1°E FEBRUARY 1953

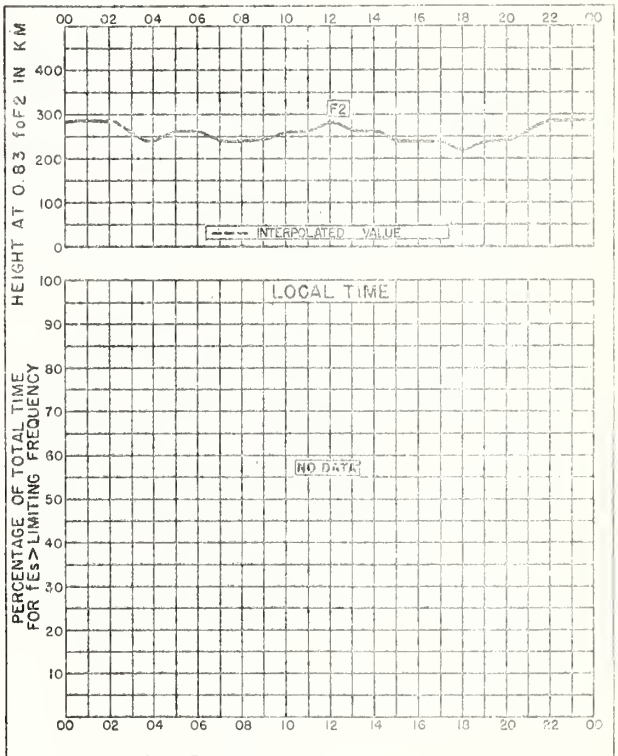


Fig. 88. DELHI, INDIA FEBRUARY 1953

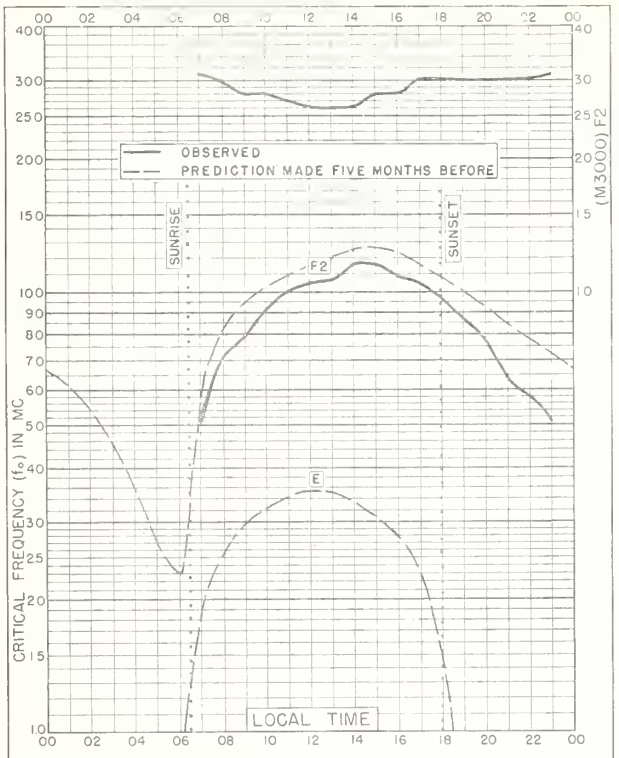


Fig. 89. BOMBAY, INDIA
19.0°N, 73.0°E FEBRUARY 1953

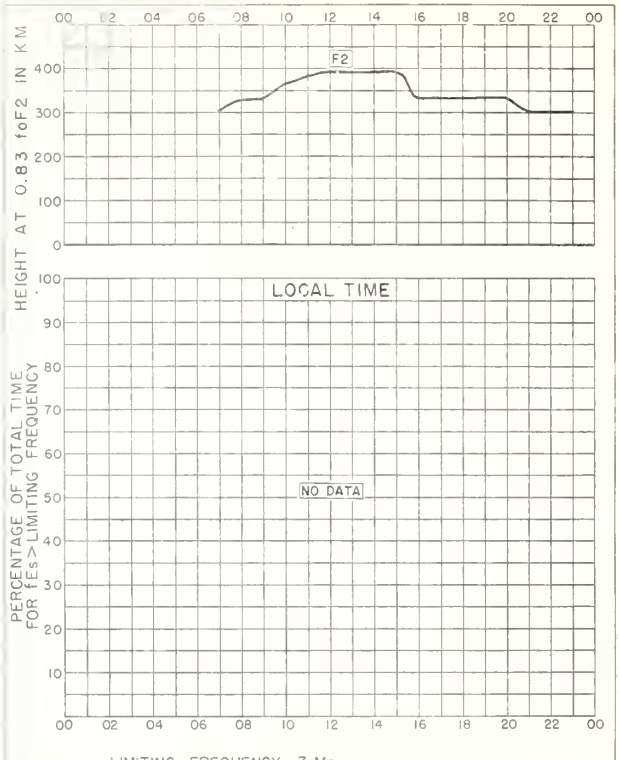


Fig 90. BOMBAY, INDIA FEBRUARY 1953

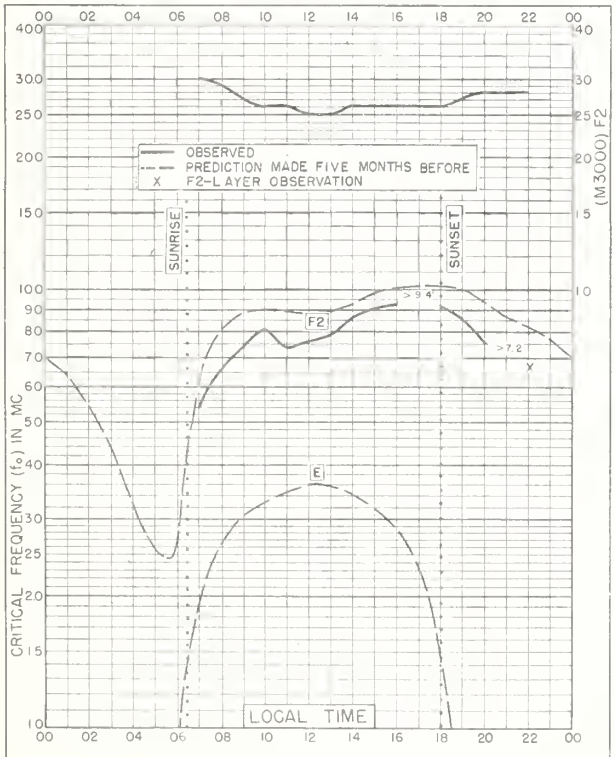


Fig. 91. MADRAS, INDIA
13.0°N, 80.2°E FEBRUARY 1953

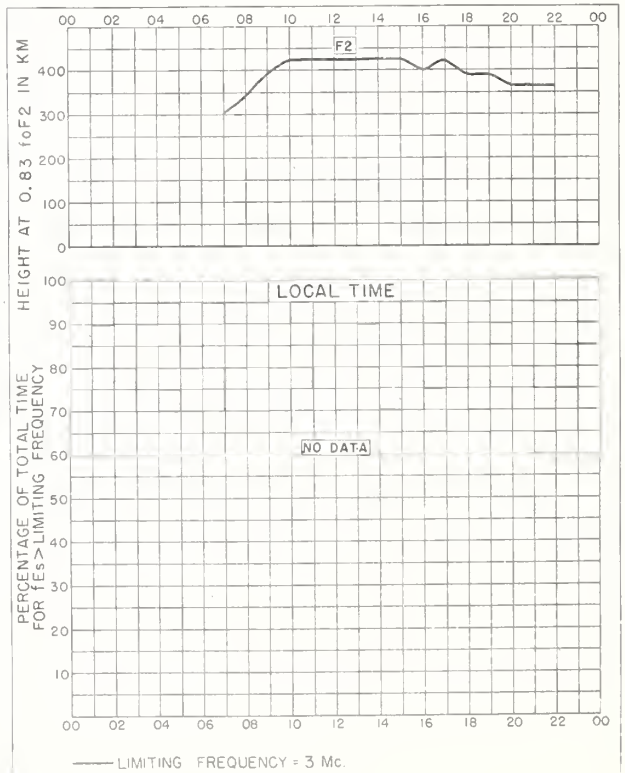


Fig 92. MADRAS, INDIA FEBRUARY 1953

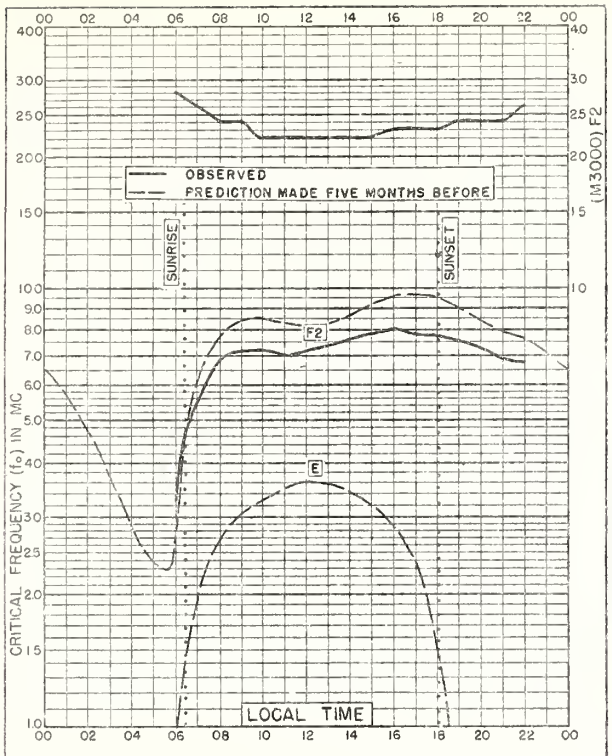


Fig. 93. TIRUCHY, INDIA
10.8°N, 78.8°E FEBRUARY 1953

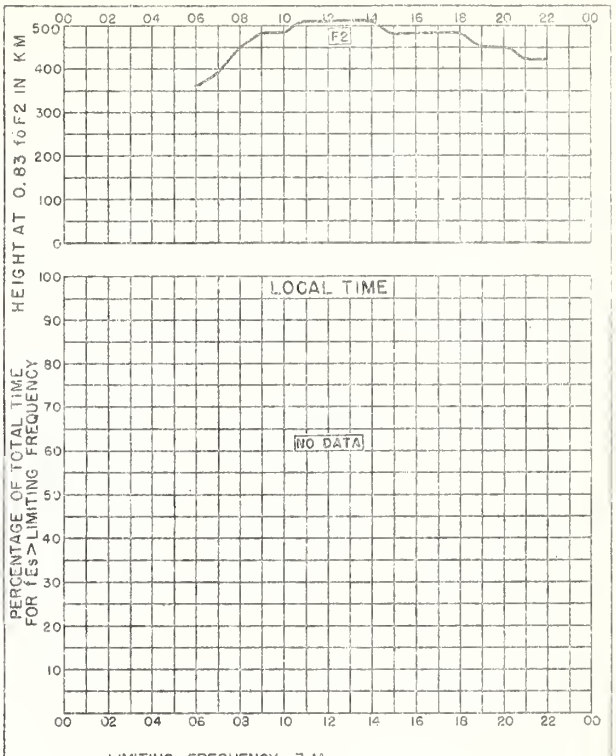


Fig. 94. TIRUCHY, INDIA FEBRUARY 1953

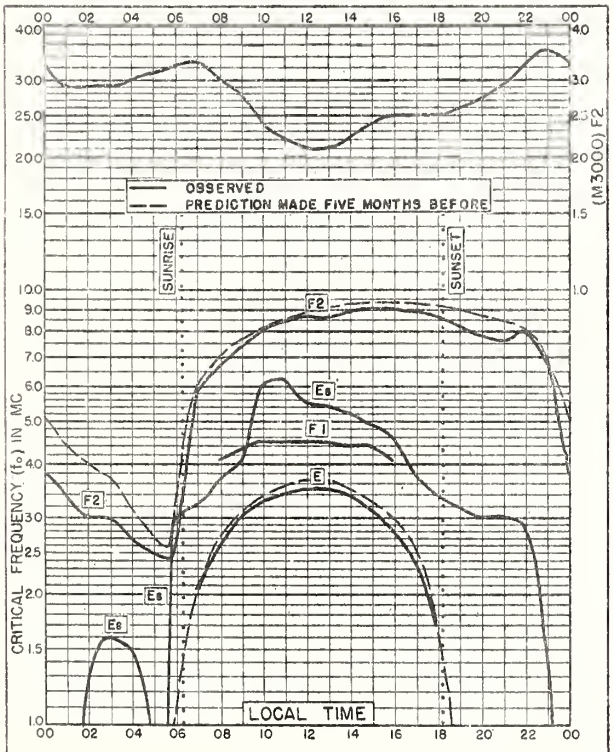
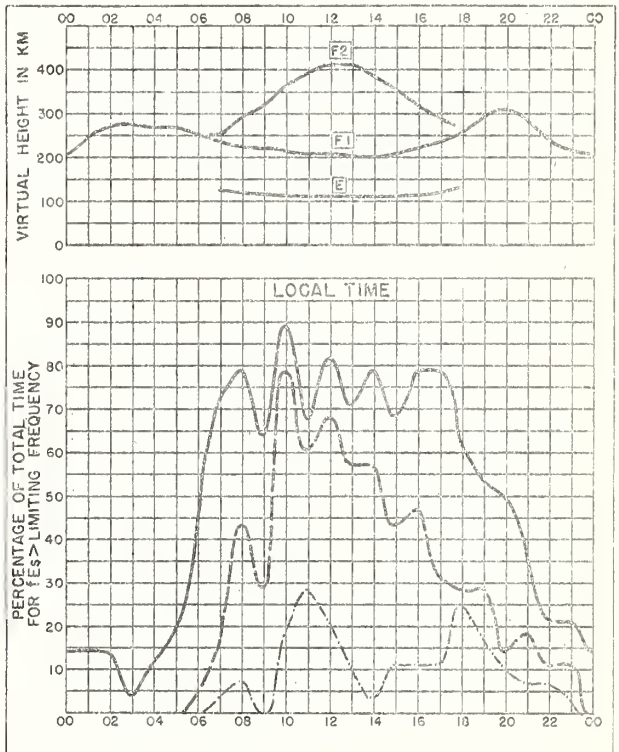


Fig. 95. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E FEBRUARY 1953



FEBRUARY 1953
Fig. 96. SINGAPORE, BRITISH MALAYA

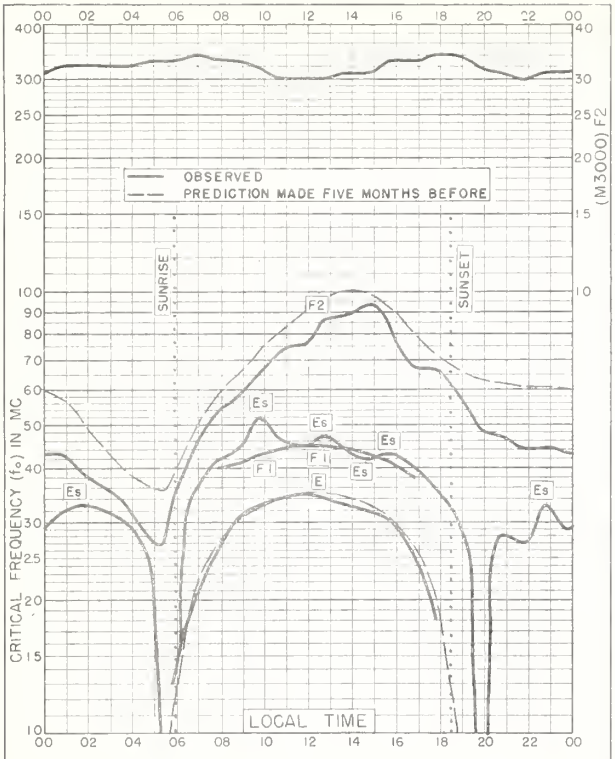
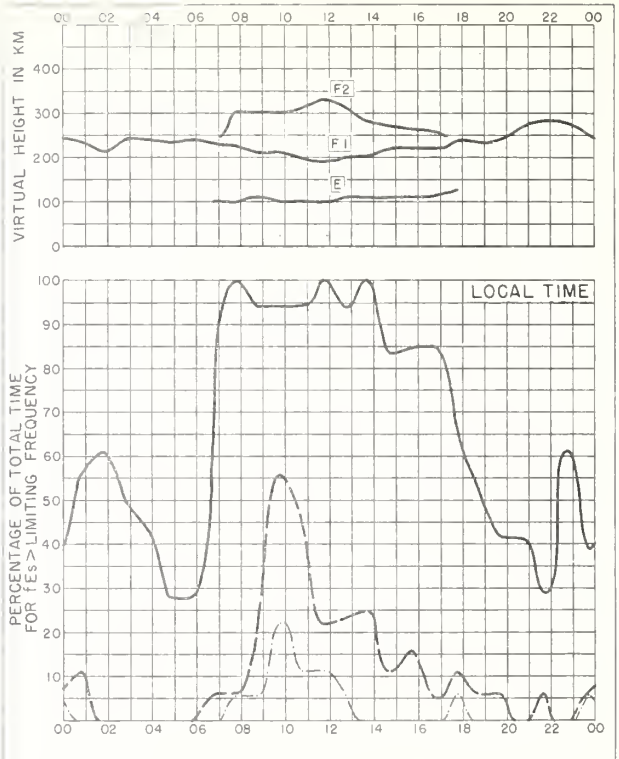


Fig. 97. TOWNSVILLE, AUSTRALIA
19.3°S, 146.8°E FEBRUARY 1953



FEBRUARY 1953
Fig. 98. TOWNSVILLE, AUSTRALIA

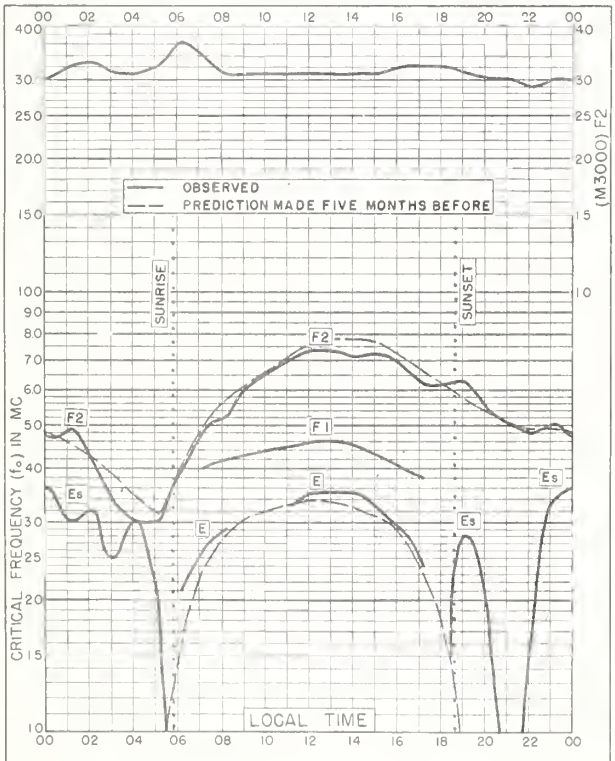


Fig. 99. BRISBANE, AUSTRALIA
27.5°S, 153.0°E FEBRUARY 1953

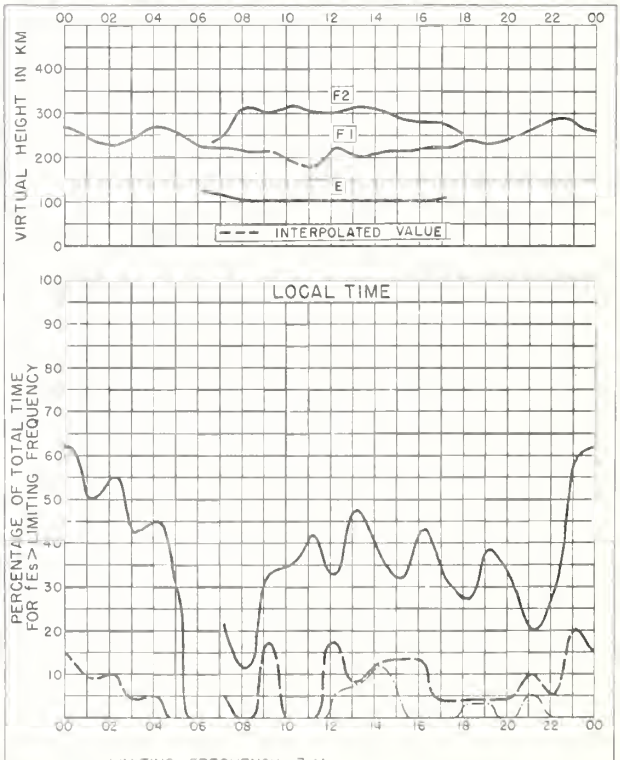


Fig. 100. BRISBANE, AUSTRALIA FEBRUARY 1953

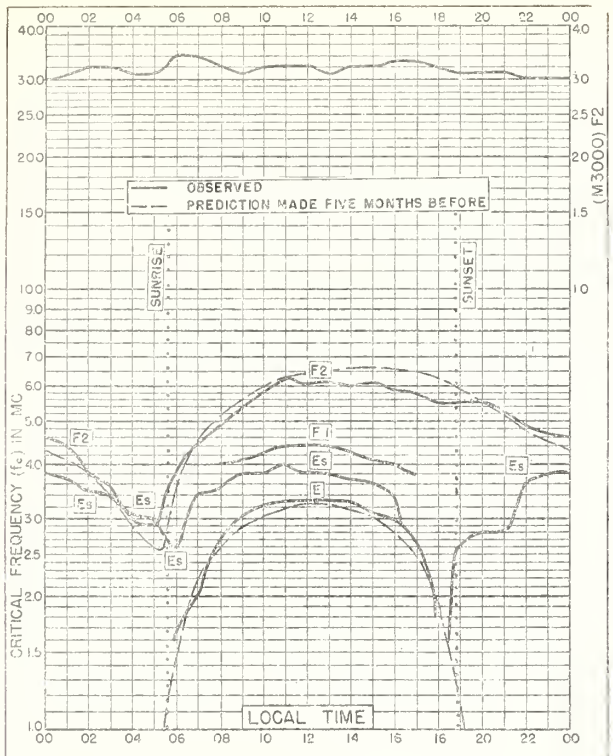


Fig. 101. CANBERRA, AUSTRALIA
35.3°S, 149.0°E FEBRUARY 1953

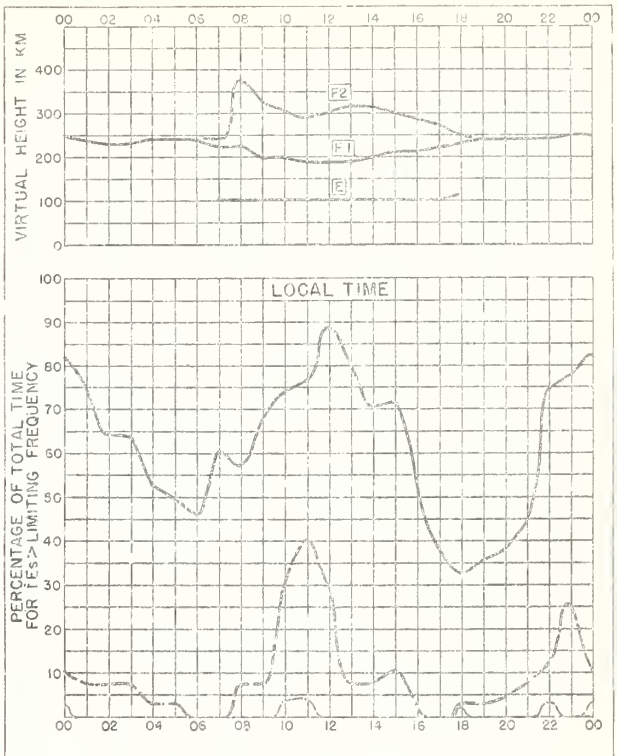


Fig. 102. CANBERRA, AUSTRALIA FEBRUARY 1953

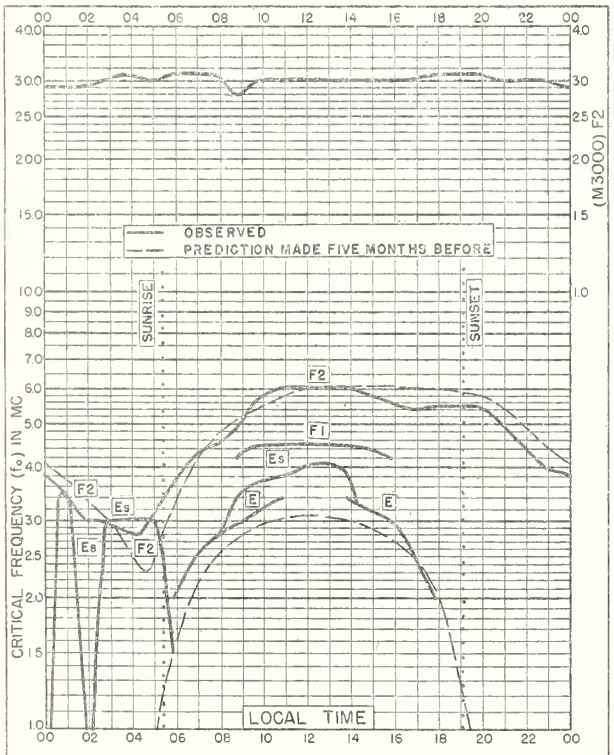


Fig. 103. HOBART, TASMANIA
42.9°S, 147.3°E FEBRUARY 1953

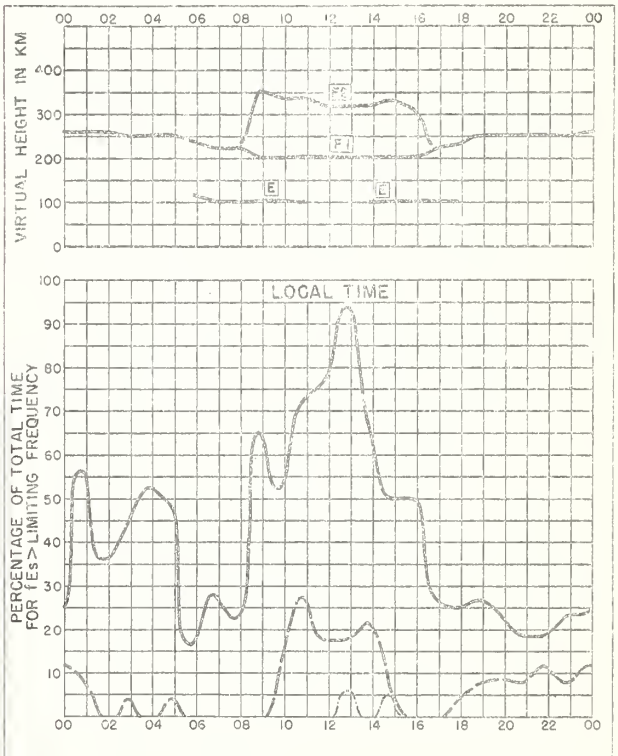


Fig. 104. HOBART, TASMANIA FEBRUARY 1953

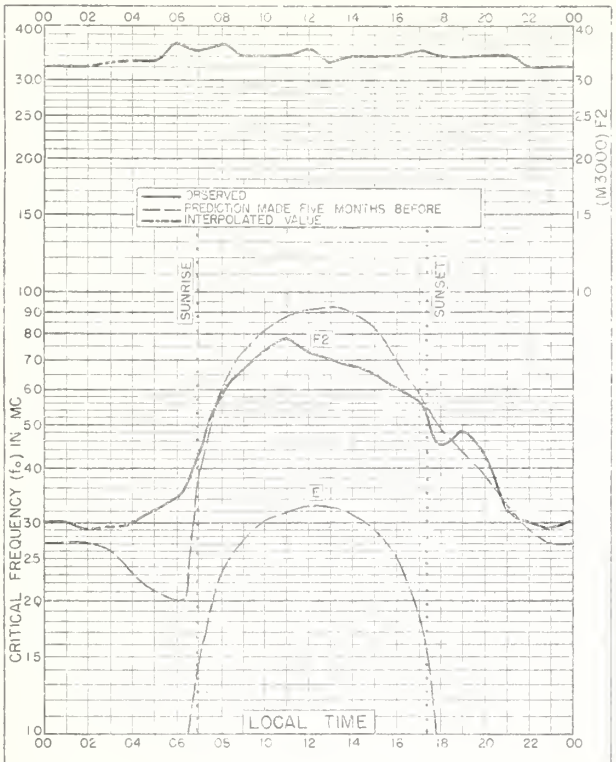


Fig. 105. DELHI, INDIA
28.6°N, 77.1°E JANUARY 1953

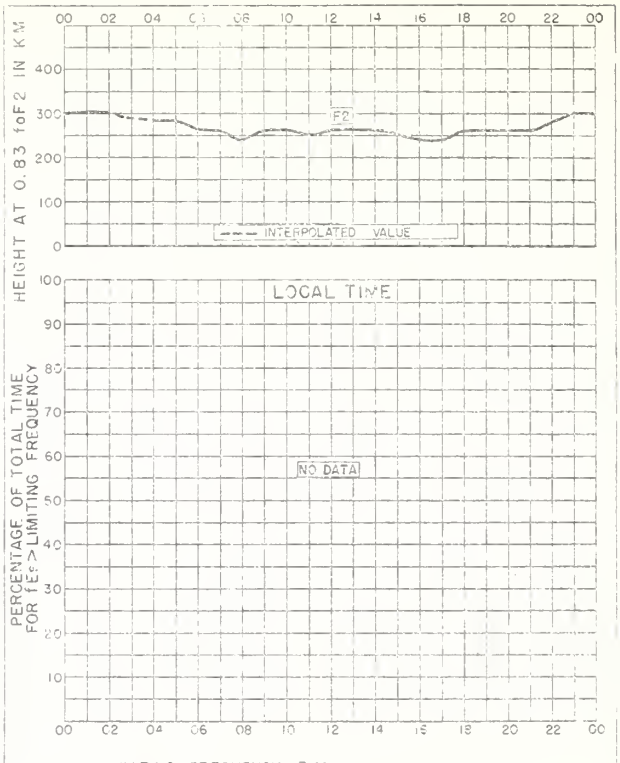


Fig. 106. DELHI, INDIA JANUARY 1953

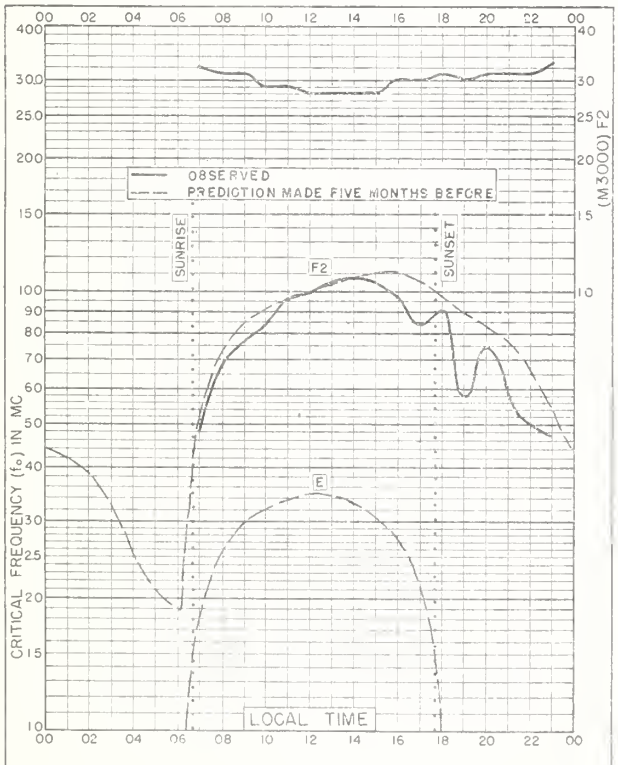


Fig 107. BOMBAY, INDIA
19.0° N, 73.0°E JANUARY 1953

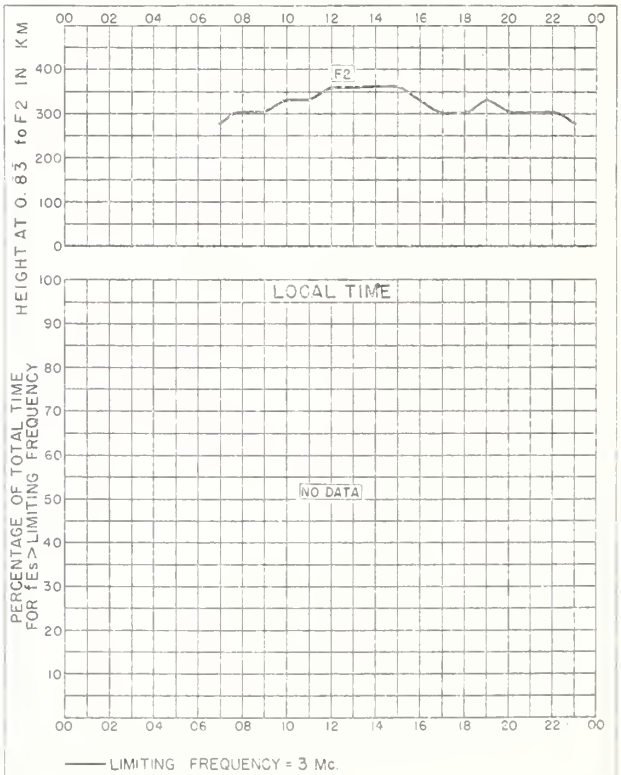


Fig. 108. BOMBAY, INDIA JANUARY 1953

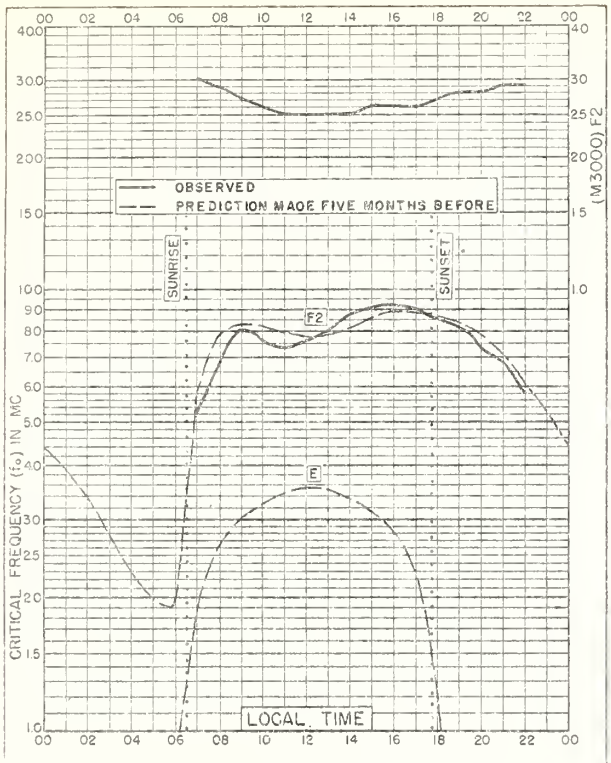


Fig. 109. MADRAS, INDIA
13.0° N, 80.2° E JANUARY 1953

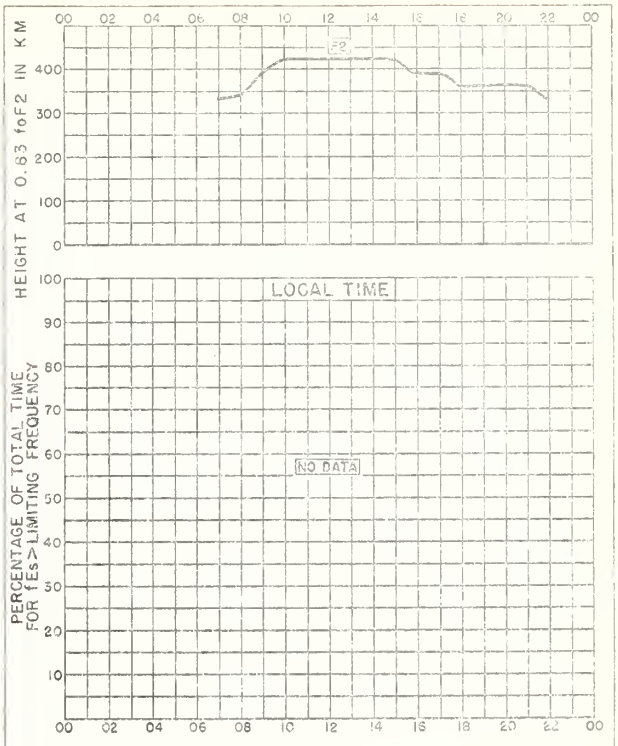


Fig. 110. MADRAS, INDIA JANUARY 1953

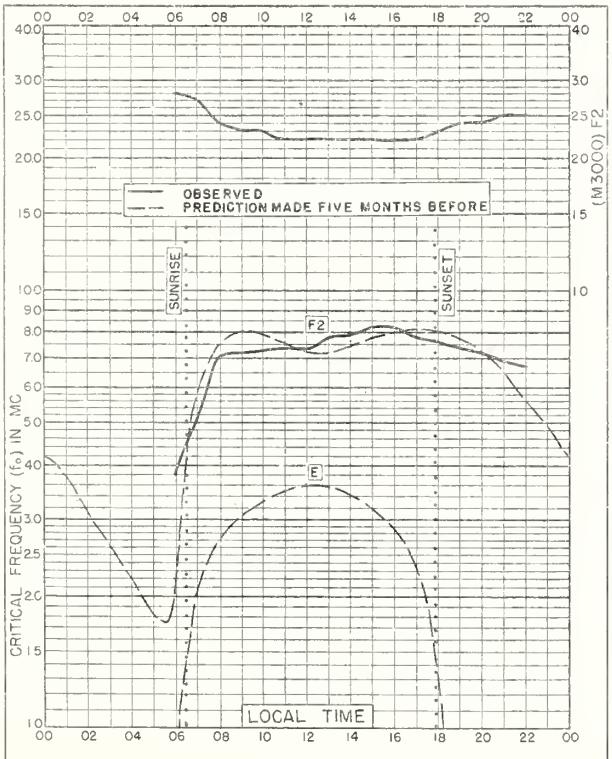


Fig. 111. TIRUCHY, INDIA
10.8° N, 78.8° E JANUARY 1953

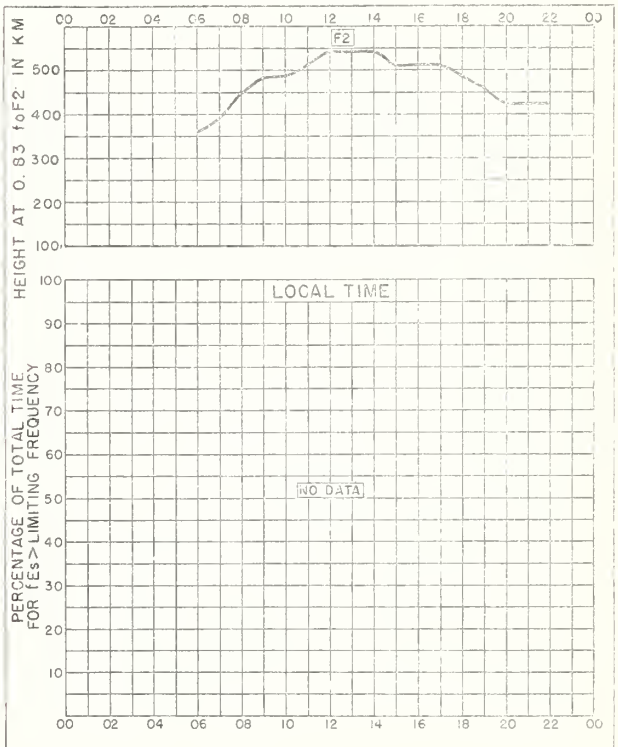


Fig. 112. TIRUCHY, INDIA JANUARY 1953

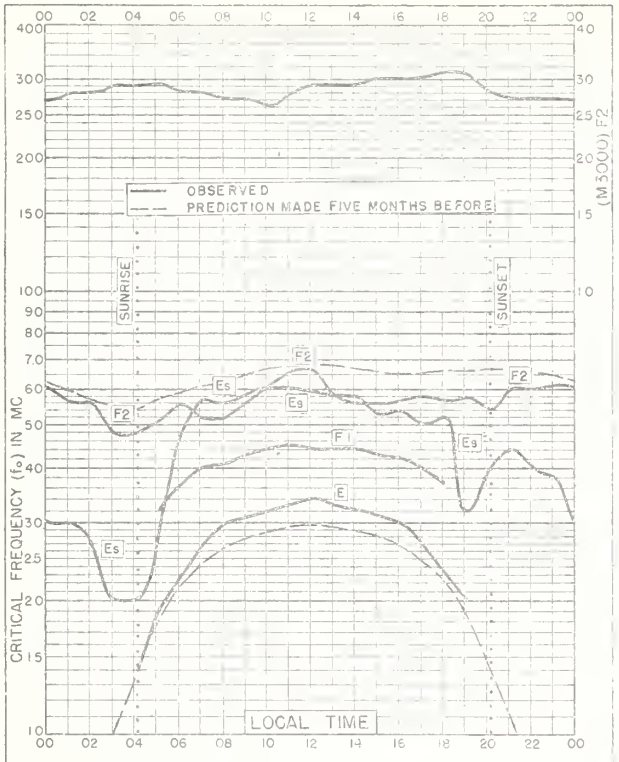


Fig. 113. FALKLAND IS.
51.7°S, 57.8°W
JANUARY 1953

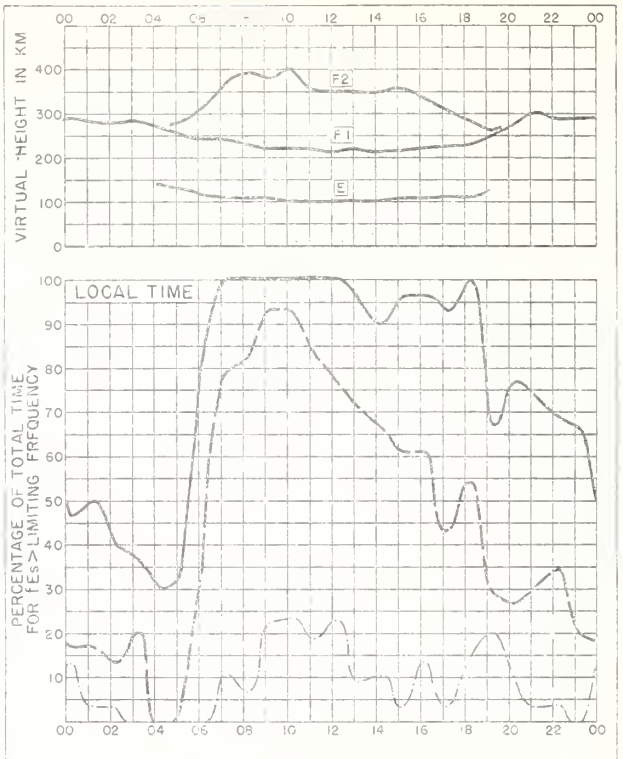


Fig. 114. FALKLAND IS.
JANUARY 1953

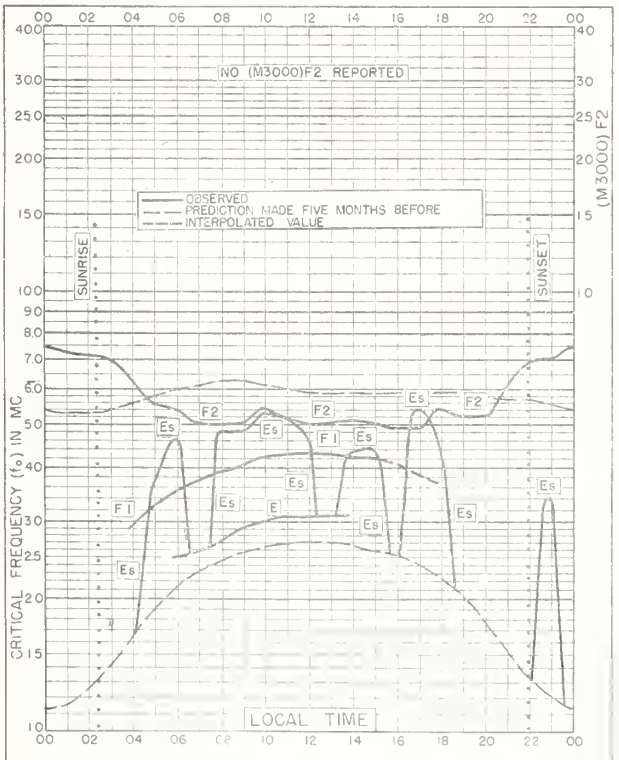


Fig. 115. PORT LOCKROY
64.8° S, 63.5° W
JANUARY 1953

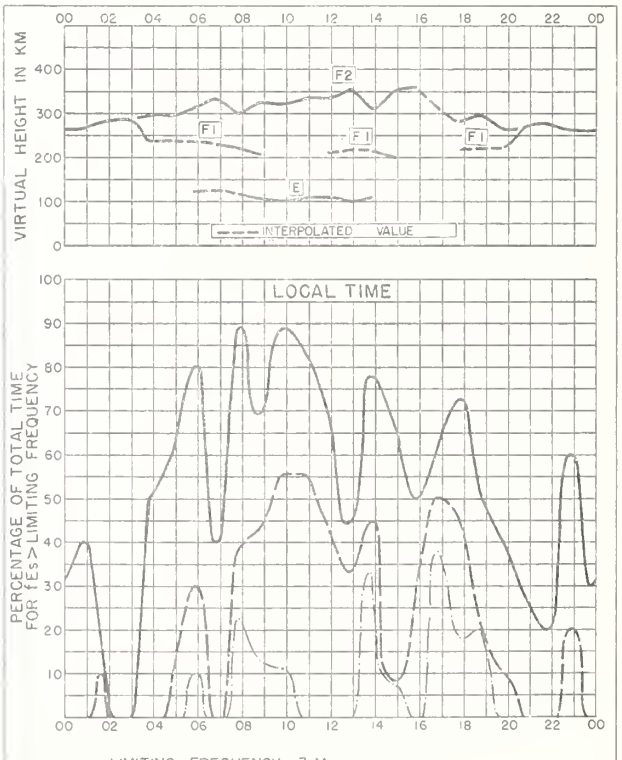


Fig. 116. PORT LOCKROY
JANUARY 1953

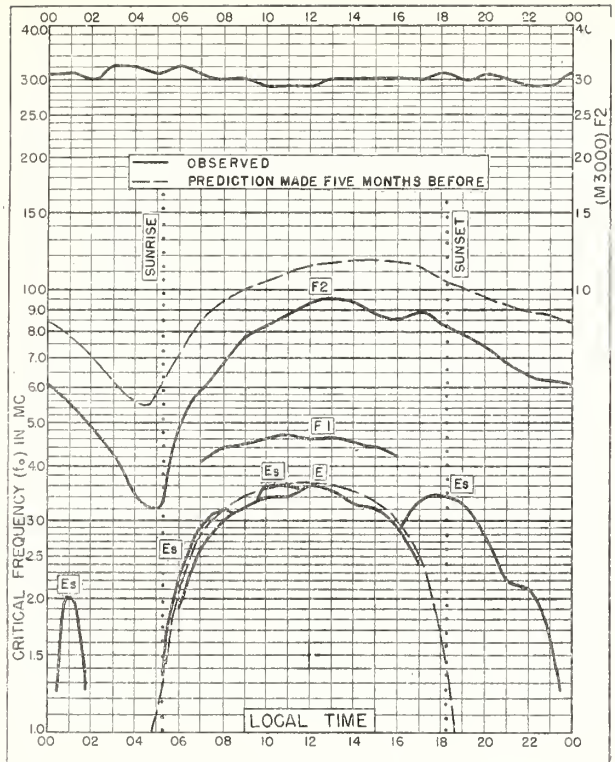


Fig. 117. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E NOVEMBER 1952

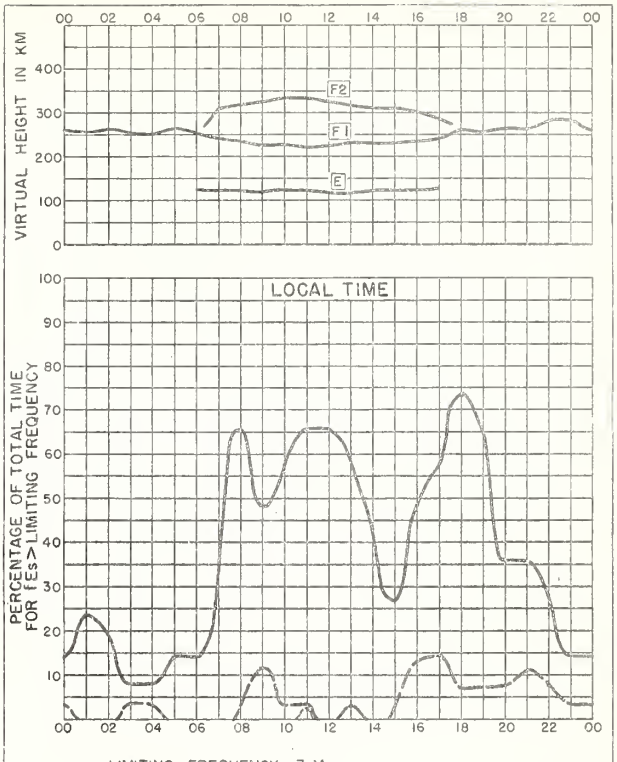


Fig. 118. TANANARIVE, MADAGASCAR NOVEMBER 1952

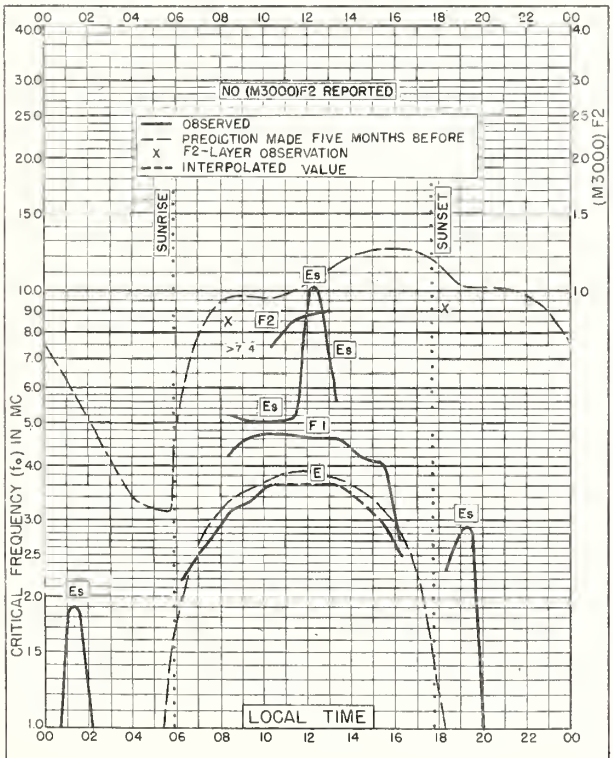


Fig. 119. IBADAN, NIGERIA
7.4°N, 4.0°E OCTOBER 1952

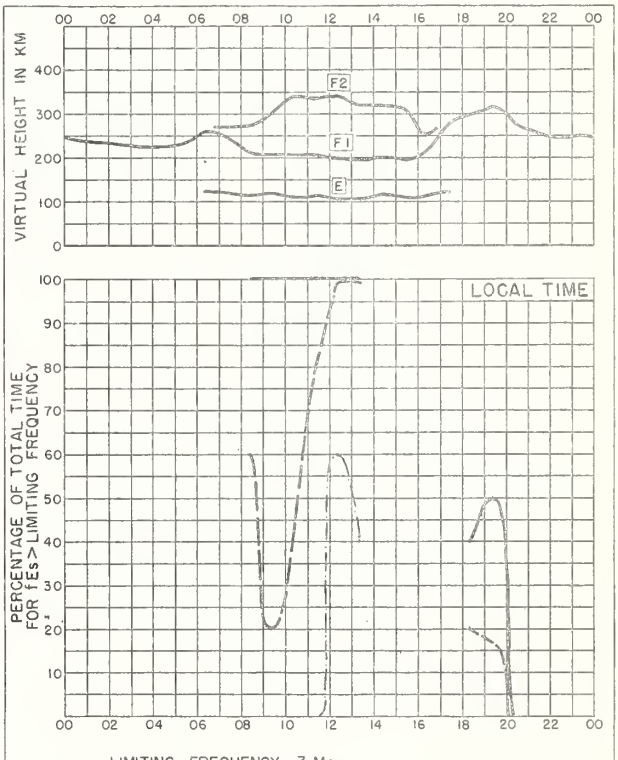


Fig. 120. IBADAN, NIGERIA OCTOBER 1952

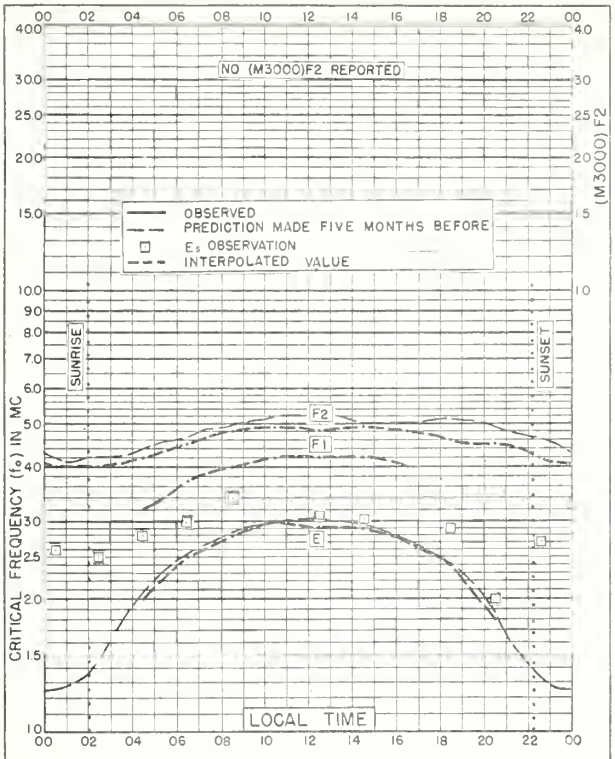


Fig. 121. LULEA, SWEDEN
65.6°N, 22.1°E JULY 1952

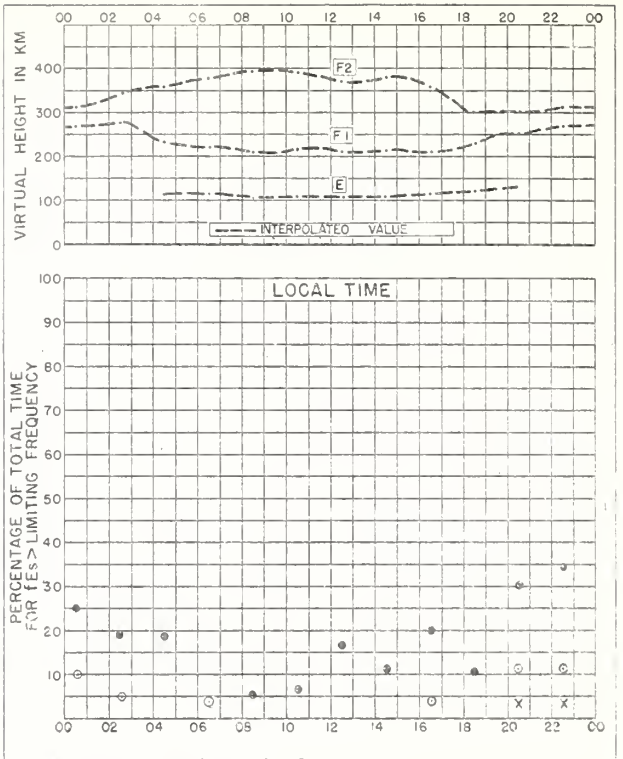


Fig. 122. LULEA, SWEDEN JULY 1952

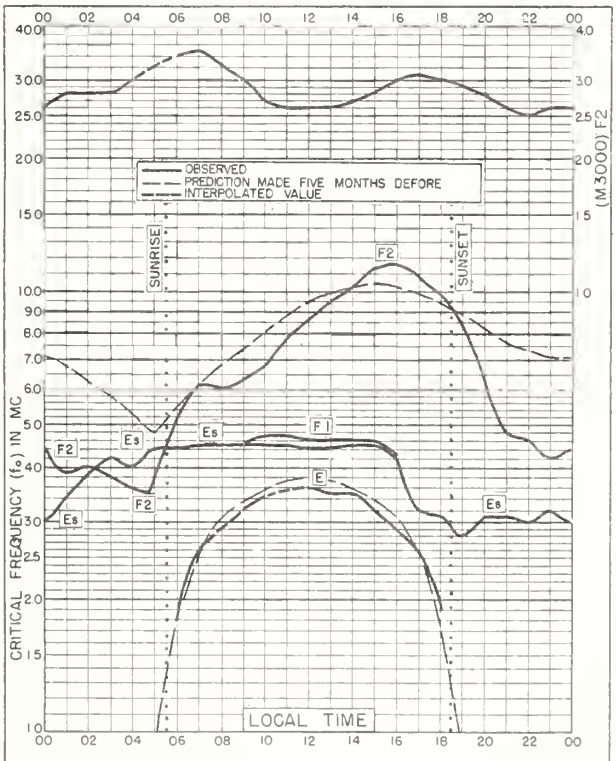


Fig. 123. DAKAR, FRENCH W AFRICA
14.6°N, 17.4° W JUNE 1952

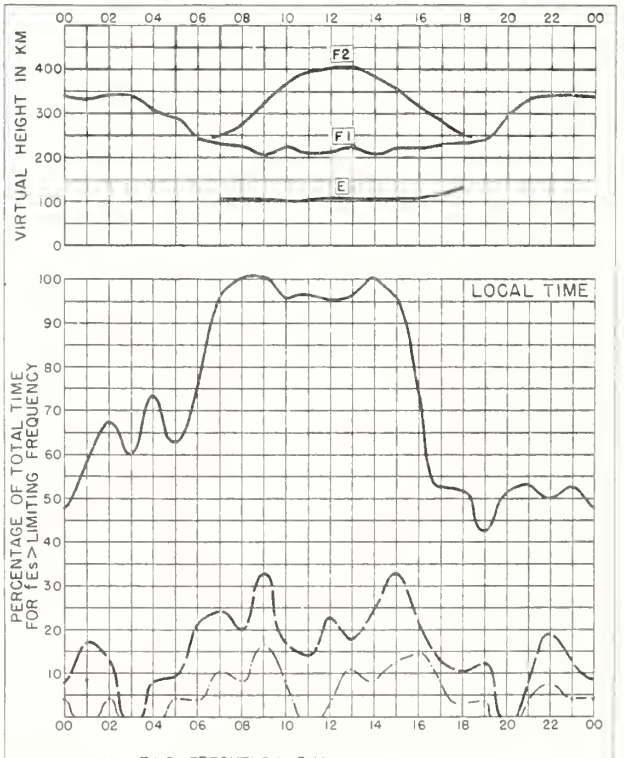


Fig. 124. DAKAR, FRENCH W. AFRICA JUNE 1952

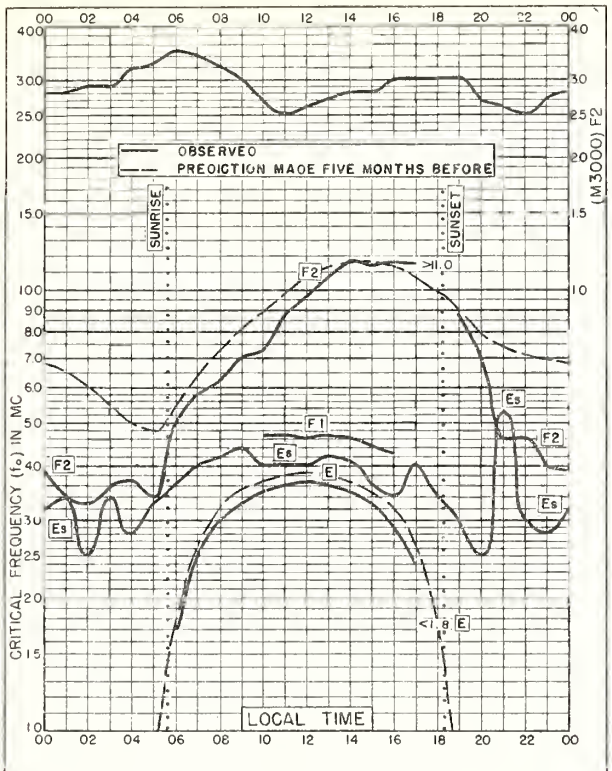


Fig. 125. DAKAR, FRENCH W. AFRICA
14.6°N, 17.4°W MAY 1952

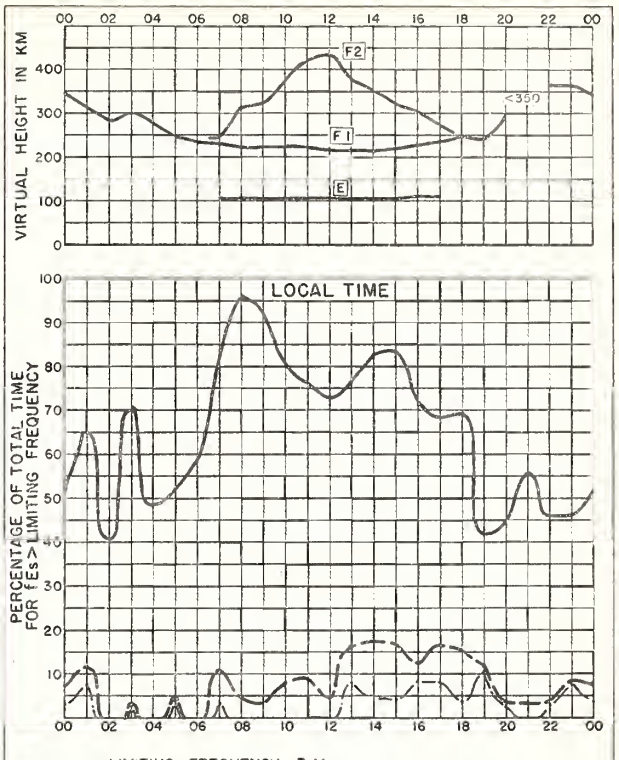


Fig. 126. DAKAR, FRENCH W. AFRICA MAY 1952

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CRPL and IRPL Reports

[A list of CRPL Section Reports is available from the Central Radio Propagation Laboratory upon request]

Daily:

Radio disturbance forecasts, every half hour from broadcast station WWV of the National Bureau of Standards. Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Semiweekly:

CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).

CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11-499-, monthly supplements to TM 11-499; Dept. of the Navy, DNC 13 () series; Dept. of the Air Force, TO 16-1B-2 series.)

CRPL—F. Ionospheric Data.

*IRPL—A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.

*IRPL—H. Frequency Guide for Operating Personnel.

Circulars of the National Bureau of Standards:

NBS Circular 462. Ionospheric Radio Propagation.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

Reports issued in past:

IRPL—C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.

IRPL—G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions. (G1, G3, available. Others out of print; see second footnote.)

IRPL—R. Nonscheduled reports:

R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.

R5. Criteria for Ionospheric Storminess.

**R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.

R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.

R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.

R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.

**R11. A Nomographic Method for both Prediction and Observation Correlation of Ionosphere Characteristics.

**R12. Short Time Variations in Ionosphere Characteristics.

R14. A Graphical Method for Calculating Ground Reflection Coefficients.

**R15. Predicted Limits for F2-Layer Radio Transmission Throughout the Solar Cycle.

**R17. Japanese Ionospheric Data—1943.

R18. Comparison of Geomagnetic Records and North Atlantic Radio Propagation Quality Figures—October 1943 Through May 1945.

**R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)

**R23. Solar-Cycle Data for Correlation with Radio Propagation Phenomena.

**R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.

**R25. The Prediction of Solar Activity as a Basis for the Prediction of Radio Propagation Phenomena.

**R26. The Ionosphere as a Measure of Solar Activity.

R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.

**R30. Disturbance Rating in Values of IRPL Quality-Figure Scale from A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.

**R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.

**R33. Ionospheric Data on File at IRPL.

**R34. The Interpretation of Recorded Values of *fEs*.

**R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc.

IRPL—T. Reports on tropospheric propagation:

T1. Radar operation and weather. (Superseded by JANP 101.)

T2. Radar coverage and weather. (Superseded by JANP 102.)

CRPL—T3. Tropospheric Propagation and Radio-Meteorology. (Reissue of Columbia Wave Propagation Group WPG—5.)

*Items bearing this symbol are distributed only by U. S. Navy. They are issued under one cover as the DNC 14 () Series.

**Out of print; information concerning cost of photostat or microfilm copies is available from CRPL upon request.